

BUILDING NEWS

New Buildings. Interiors. New Materials (flameproof and invisible paints).
New Equipment. Fairs. Propagation of Art Work. This section starts on page 25.

DESIGN TRENDS

Lewis Mumford asks and answers "What is a City?" Housing in America; in Britain.
Opportunities in City Planning. Newspaper Plants. This section starts on page 57.

BUILDING TYPES

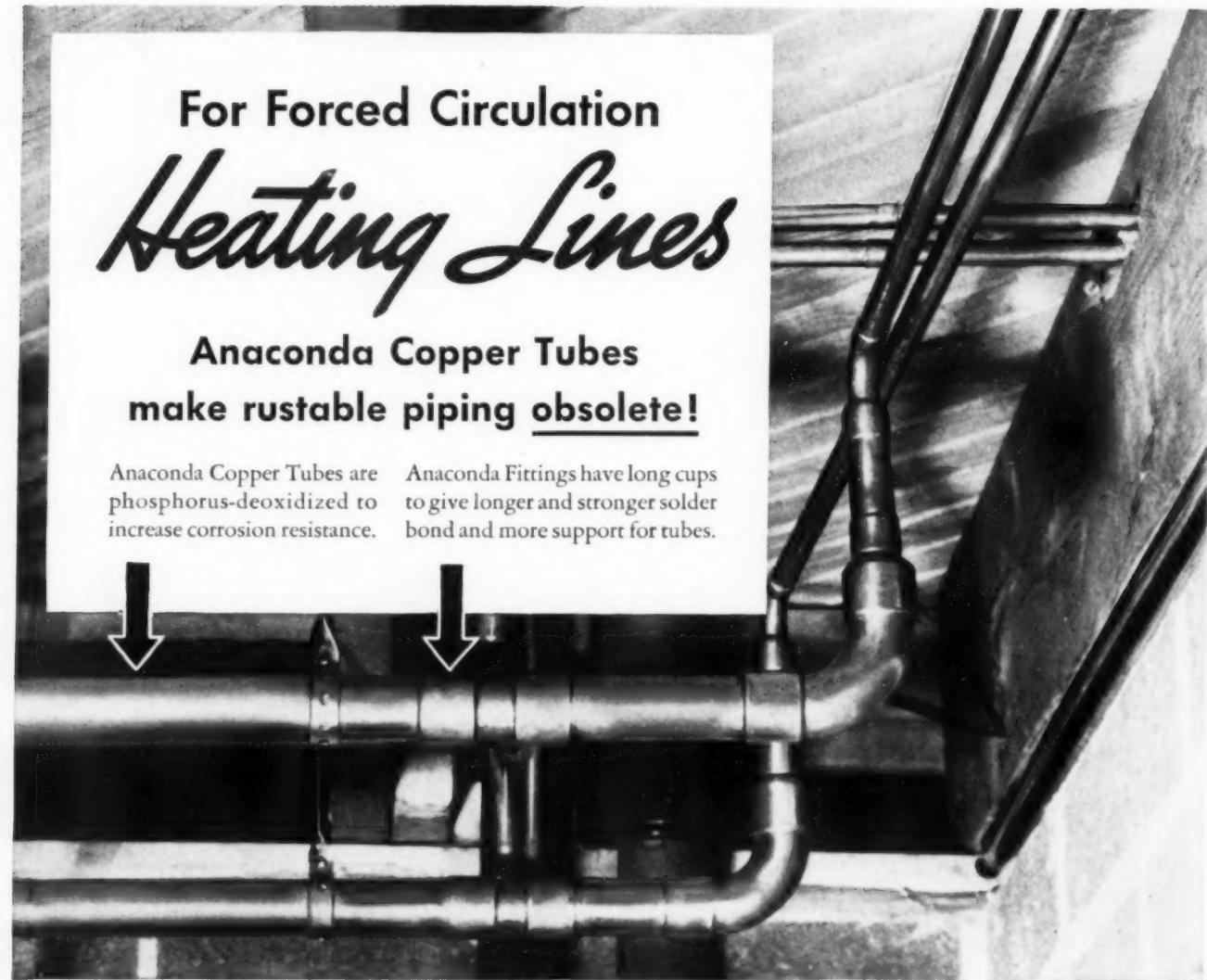
HOUSES (\$20,000 and up)—A reference study stressing Service Facilities, Dressing Rooms
and Land Development. Illustrated Case Studies. This section starts on page 105.

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NOVEMBER 1937



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BEHIND THE RECORD

This Month

IF WE WERE reading this issue for the first time, we would, under ordinary circumstances, start with the new buildings, new equipment, new materials, and other significant events in *Building News*, proceeding step by step through each of the three sections. On the other hand, if we had a house costing \$20,000 or



John W. Laing

about the issue, but you doubtless want to be through with this page and go on to see what Alan Dunn is up to on page 7.

Next Month

FOR AN eyeful in December, be on the lookout for the first detailed presentation of the United States pavilion in Paris. *Building News* of course will include other new and noteworthy buildings—Sardi's restaurant in Los Angeles, for example—but the pavilion alone is worth the price of admission.

Design Trends next month will get down to cases in a serious manner. A study on mechanization in building (planned, but not completed in time, for November); a pictorial record of about 25 examples of lettering for building identification, advertising, etc., selected from a variety of sources, including the Paris Fair; an extensive study, with topical illustrations, of interior planning originating from use requirements; a new two-page monthly feature on building costs; and a review by M. A. Mikkelsen of *Our Cities; Their Role in the National Economy*—the report of the Urbanism Committee to the National Resources Committee—are scheduled for this section. Journalism catching up with architecture, if you ask us.

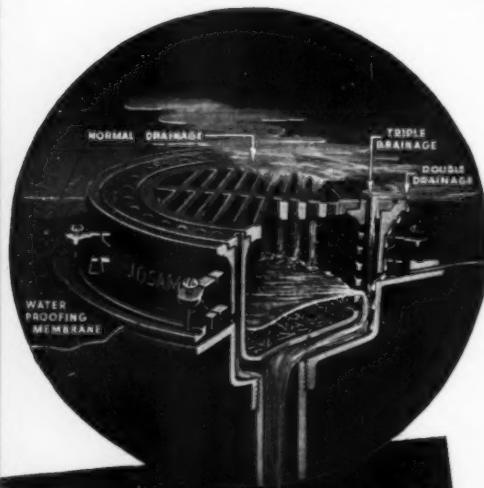
Office Buildings, inside and outside, will be the subject treated in next month's *Building Types* section. What we are striving to accomplish here is a reference study which you can use immediately if you happen to be working on a given type when we discuss it, or which you will file, where you can find it, pending the time such a job sticks up its head.

As a parting shot on the December number, we might mention that Alan Dunn promises something seasonal.

Last Month

WHEN WE discovered it last month our first impulse was (Continued on page 7)

"I SAID **NON-CLOG DRAINS**
AND THERE'S TO BE NO MORE
EXCEPTIONS! **THIS MUST NOT**
HAPPEN AGAIN!"



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Non-Clog Triple Drainage Drains definitely
ensure continuous...unobstructed drainage.
Debris collects in the sediment bucket, but
cannot clog the drain. Surface flow always
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No other type drain ought to be installed in
areaways, warehouses, basements, industrial
plants, storage, garage, wash or toilet rooms.

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Please send copy of special Non-Clog Triple Drainage
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ONE COUPON USE ONE COUPON

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...disabled and rusted equipment...
water-logged merchandise can be
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and specify the right type drain for
each location...and there are locations
where only Non-Clog Triple
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"I insist...insist, understand...that a
specification writer recognize special
needs of certain locations and specify
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that anything
would be subjected

to damage occasioned by
floods and seepage due to clogged drains.

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irritating experiences are emphasized
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of making Josam Non-Clog Triple
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these triple drainage...sediment
arresting drains...are a definite
assurance of uninterrupted drainage
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laden with debris.

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BEHIND THE Record

to recall every single October number and feed 'em, without benefit of condiment, to whomever was responsible for a regrettable error. But investigation indicated that in all fairness we'd have to share the meal ourself, so we decided in favor of a public confession.

Though the issue boasted of such features as Frank Lloyd Wright and Simon Breines on architecture in the U.S.S.R., twelve pages on the Williamsburg Inn, a forty-page reference study on Apartment Houses, etc., this blooming blunder marred what to us at least was an almost letter-perfect job.

As we have said before, advertising is an essential part of a good magazine. Not only does it enable the publisher to produce a worthwhile information service at low cost, but the messages contained in the advertisements represent an important part of the information delivered. Consequently if something goes wrong in our advertisements we feel obliged to square it with our readers as well as with the advertiser concerned.

On pages 44 and 45 of this issue you'll find Detroit Steel Products Company's announcement on *bonderized* Fenestra steel windows presented in the right sequence, not with the hind end foremost as it somehow got printed last month. We're sorry and Detroit Steel's sorry, but the copywriter who prepared the ad will probably wrap a bomb in his next shipment of plates to us.

O Temporal

IMAGINE how we felt when the following response to a routine expiration notice dropped out of its journey-scared envelope:

ARCHITECTURAL RECORD.

Yesterday I again received a notice from you advising me of the fact that my subscription to ARCHITECTURAL RECORD has expired. I am only too aware of the fact and I have tried to remedy the trouble, but due to the serious upheaval my country is undergoing and the exigencies of the war, it is quite impossible to send money out of the country.

You can well imagine what a disappointment this is for me because, of all the archi-

tectural magazines I know, ARCHITECTURAL RECORD holds first place in my estimation. In normal times I would naturally feel even more upset, but alongside the real tragedies we are daily living, it would seem exaggerated to say how much I miss the revue. However, I do want to say how much I appreciate your generosity in sending me numbers after the expiration of my subscription. I have received the March and May numbers which I hold at your disposition. The April number must have been lost due to irregularity in mails—another impediment which makes subscription almost out of the question.

I hope in some near future date to be able to recuperate my loss and continue my subscription.

Believe me

Sincerely yours,
MARIANO GARRIGUES

Madrid, Spain.



Conversation by Mail

ARCHITECTURAL RECORD:

"With congratulations upon your excellent September 1937 number, I should like to raise a question about the caption under the picture of the church at the bottom of

page 31 in the very fine article on housing in Argentina.

"I would really be interested to know wherein the church auditorium seriously fails of its purpose, and how it neglects the facts of life for church design."

Very truly yours,
ELBERT M. CONOVER,
Director
The Interdenominational
Bureau of Architecture
New York, N. Y.

Excerpt from our reply:

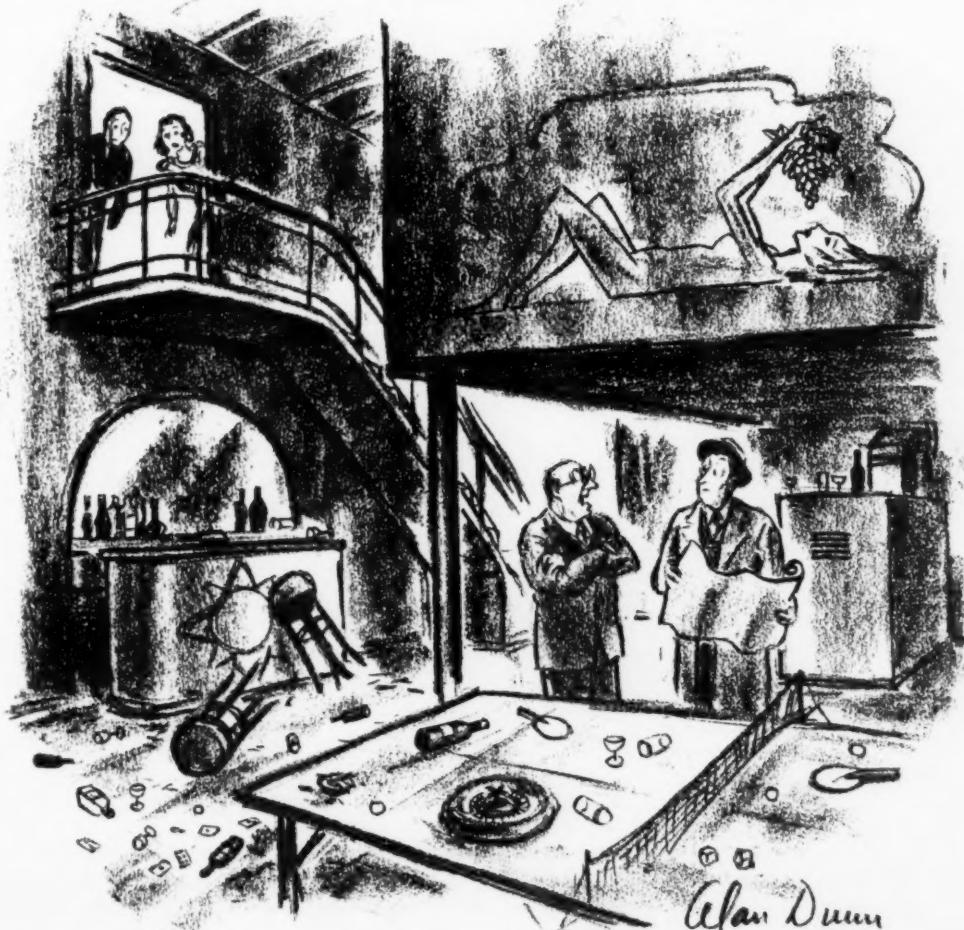
"... the lack of acceptable editorial standards in the field of architectural journalism becomes increasingly evident. . . . We have, therefore, set up a research division to find out what the standards are in the building field itself; and from this research we hope to establish editorial standards based on actual practice in the field, rather than on the personal opinions of the editors.

"These explorations have gone far enough to make it possible to analyze buildings on a reasonably sound basis.

Take, for example, the two auditoriums on pages 30 and 31 of the September issue. The control of light, sound, and atmosphere is an increasingly precise science; and if we are to take this control as a criterion in analyzing a given structure, it becomes clear that the church is far less adapted to seeing, hearing, and physical comfort than the gymnasium. That is what was meant by neglecting the facts of life, but we do not for a moment mean to imply that other—and less tangible—factors can be overlooked in developing the ultimate form of a church building. . . .

Excerpt from Mr. Conover's letter No. 2:

"I can see now your clear and logical distinction between such matters of line, sound, atmosphere, etc. being as adequately handled in a church as in any other building. In addition to these items there are, of course, other factors essential in church design . . ."



"Exactly! I want the rumpus room changed back into a cellar."

—Drawn for the RECORD by Alan Dunn.



BEATING COLD WEATHER *with Economy and Speed*

Wolcott Building
Hutchinson, Kansas

Architects
Alonzo H. Gentry,
Voscamp and Neville,
Kansas City, Mo.
and
A. R. Mann & Co.,
Hutchinson, Kansas
General Contractors
M. C. Foy & Son,
Hutchinson, Kansas

About 80% rented before completion, every day the construction time could be shortened meant earlier financial return to the client. Lehigh Early Strength Cement was used as a winter safeguard and to speed the job which was started in the fall of 1936. Forms were stripped five days sooner than would have been the case with normal portland cement. The period of heat protection was reduced to a minimum.

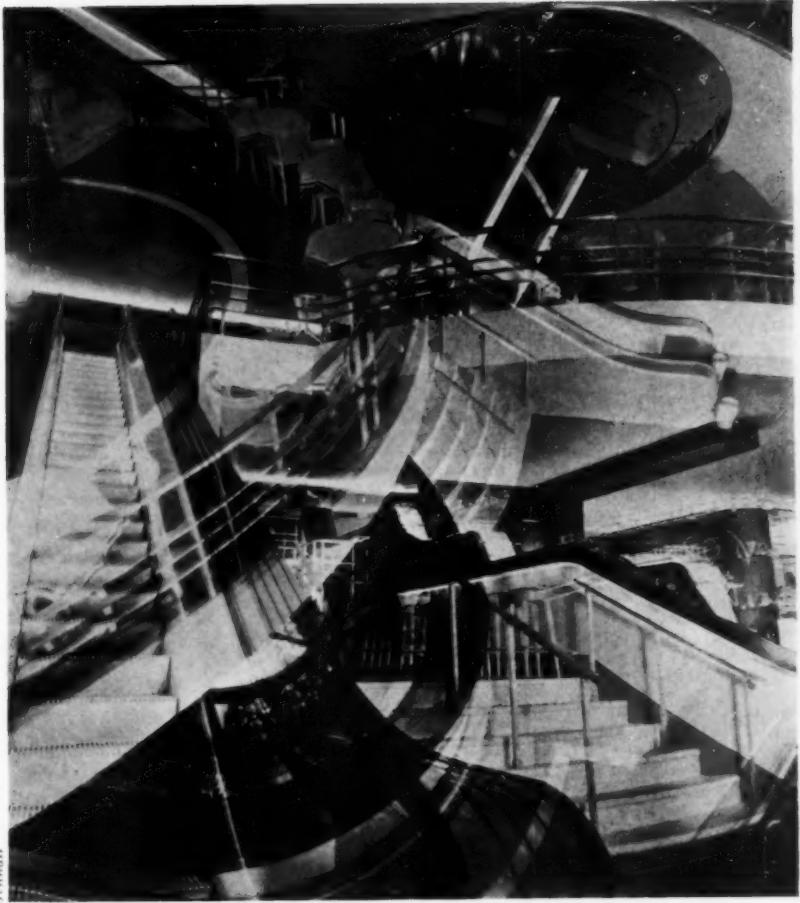
Because of quick re-use, form requirements were reduced from four sets to two sets for column head forms and from four sets to three sets for floors—a lumber saving of \$500. Including savings on heat protection costs and overhead, the contractor estimated quick service concrete reduced construction cost by \$1500.

Similar speed and consequent reduced costs are possible when Lehigh Early Strength Cement is used for concrete in any weather. Architects are invited to consult the Lehigh Service Department for time- and money-saving data on any specific construction.

LEHIGH PORTLAND CEMENT COMPANY, Allentown, Pa., Chicago, Ill., Spokane, Wash.

LEHIGH EARLY STRENGTH CEMENT

BUILDING NEWS



All types of drinking, dining, dancing provided for . . .

ARCHITECTURAL

Record

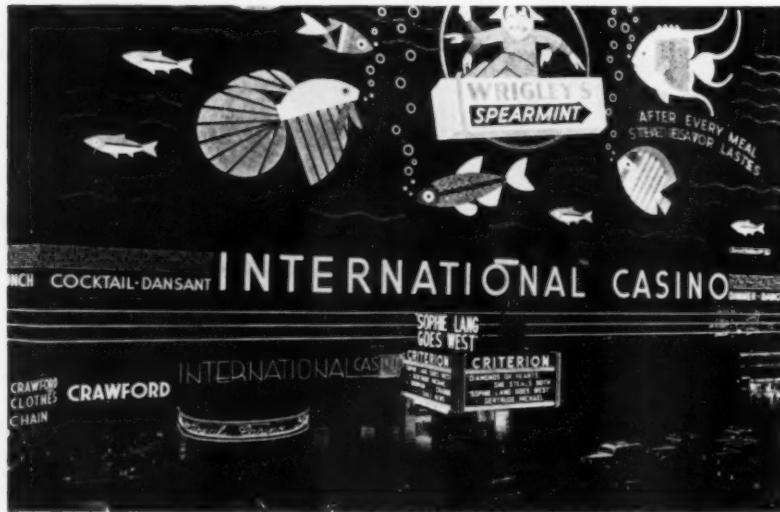
NEW CASINO DESIGNED FOR LUXURY ENTERTAINMENT



Photos by Schnall

Seating 1,200 persons, the Restaurant at International Casino is the most spectacular example to date of combined theater and restaurant functions. Here the plan was determined quite as much by sight lines as by service

requirements, and acoustical, lighting, and air conditioning requirements were infinitely more complex than for a theater or restaurant alone. The Restaurant has a completely equipped stage.



With no daytime "elevation" to speak of, the Casino leaps into prominence at nightfall, topped by its 7-foot neon sign and encircled by three continuous lines of giant neon which mark the muntins of the building's ribbon windows. Overhead is the famous 7-story Wrigley sign which makes a taxpayer at this location possible.

ONLY metropolitan areas afford sufficient concentrations of population to warrant so large and highly specialized a drink-dine-and-dance establishment as that of the new International Casino, latest addition to New York's highly touted Times Square. And characteristically American is its application of "mass production" technique to a "luxury" product—a trend pioneered in the restaurant field by the Longchamps chain in New York. To operate such an establishment profitably on one of the world's costliest plots, a canny management required first of all a much longer daily schedule than either restaurant or night club ordinarily employs—the Casino is continually open from 12 noon to 4 a.m. This implied a detailed analysis of various types of drinking, dining, and dancing and a

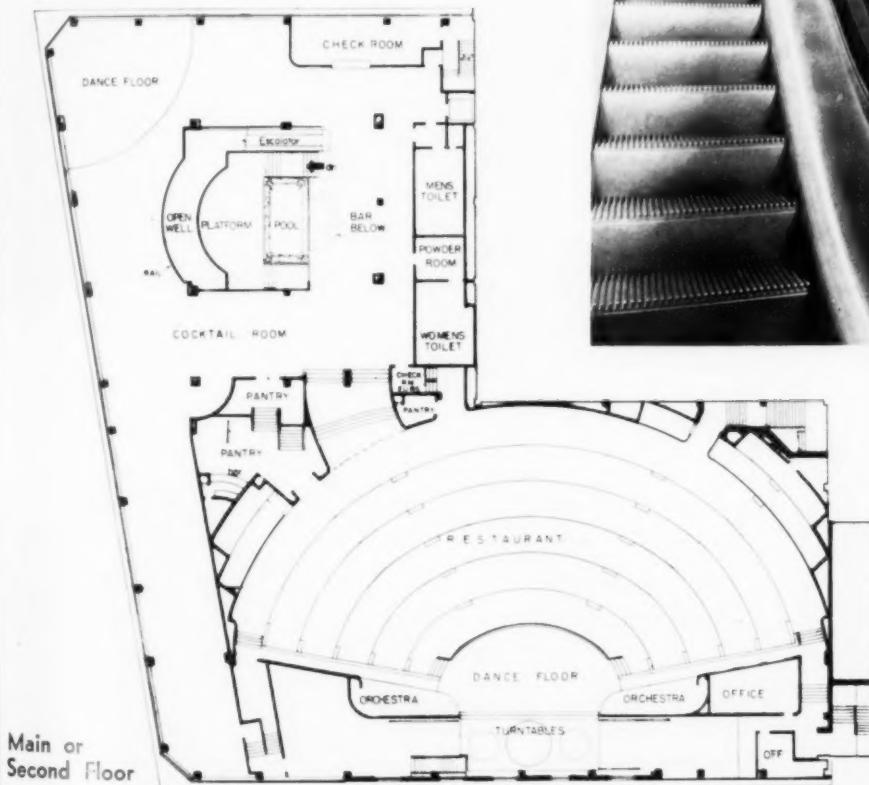
OFFICE OF THOMAS W. LAMB, INC.,

Architects

Street Floor



Circulation was not left to chance. For casual passersby the wide shallow steps of the bar and a glittering escalator lead up from the main entrance; but for heavy motor traffic a separate entrance and elevator provide direct access to the second floor.



Main or
Second Floor

plan which provided specifically for each. Second problem facing the architects was adaptation of these requirements to an existing structure — part of the first and all of the upper two floors of a new taxpayer. The plans (above) indicate how effectively this was accomplished.

First in the daily sequence of use is the Spiral Bar (details on next page) and the street floor and mezzanine cafes, which serve drinks and light food continuously to closing: this section has its own kitchen and pantries on the mezzanine level. Next to go into action, serving



Frankly theatrical, the fountain on the mezzanine level is reflected in the mirrored plaque on the ceiling. From this plaque hangs a revolving chromium ball set in a diagonal sheet of glass. The whole is floodlighted.

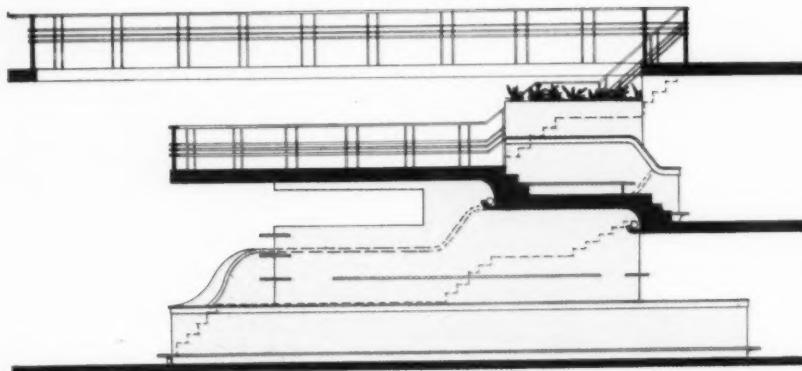
Not shown here, the small kitchen is located behind the Spiral Bar at the mezzanine level while the main kitchen occupies the third floor above the Cocktail Room.

lunch and tea to larger parties, is the huge Cocktail Room with its own dance floor and orchestra: this section has its own service bar and pantries, uses main kitchen on third floor jointly with the Restaurant. Last to open at 6 p.m., the Restaurant runs steadily till closing time, thus attracting all diners-out. The combined stage and dance floor has two orchestras and is used alternately for dancing and for floor shows. The entire establishment is interconnected by an elaborate system of escalators, elevators, stairs and passageways for both staff and patrons.

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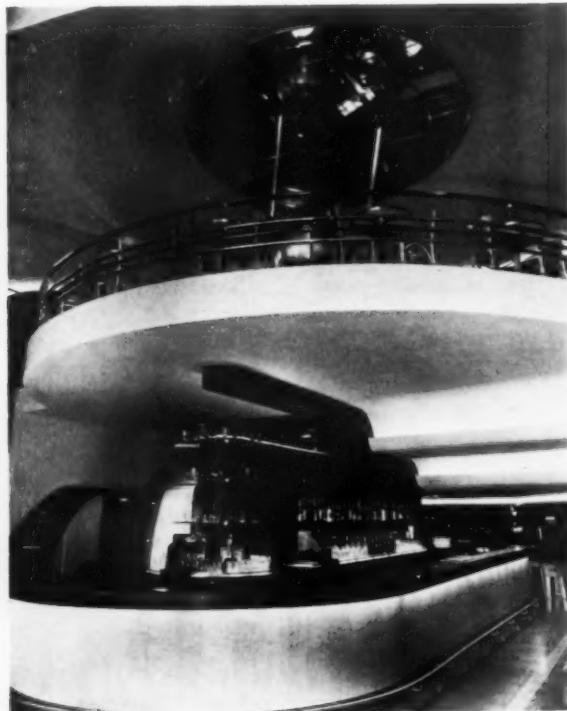
INTERNATIONAL CASINO



Section and three views of Spiral Bar show how effectively the architects solved the problem of easy transition from street to main floor. Viewed in this light, the Bar is much more than an expensive ornament; it serves the highly realistic merchandising tactic of catching the public and leading it into the heart of the establishment.



Looking down on Bar and Fountain from Cocktail Room.



From the front, the Bar resembles a ship.

Photos by Schnall

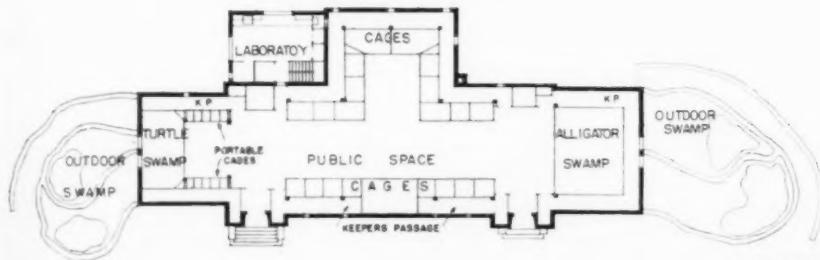
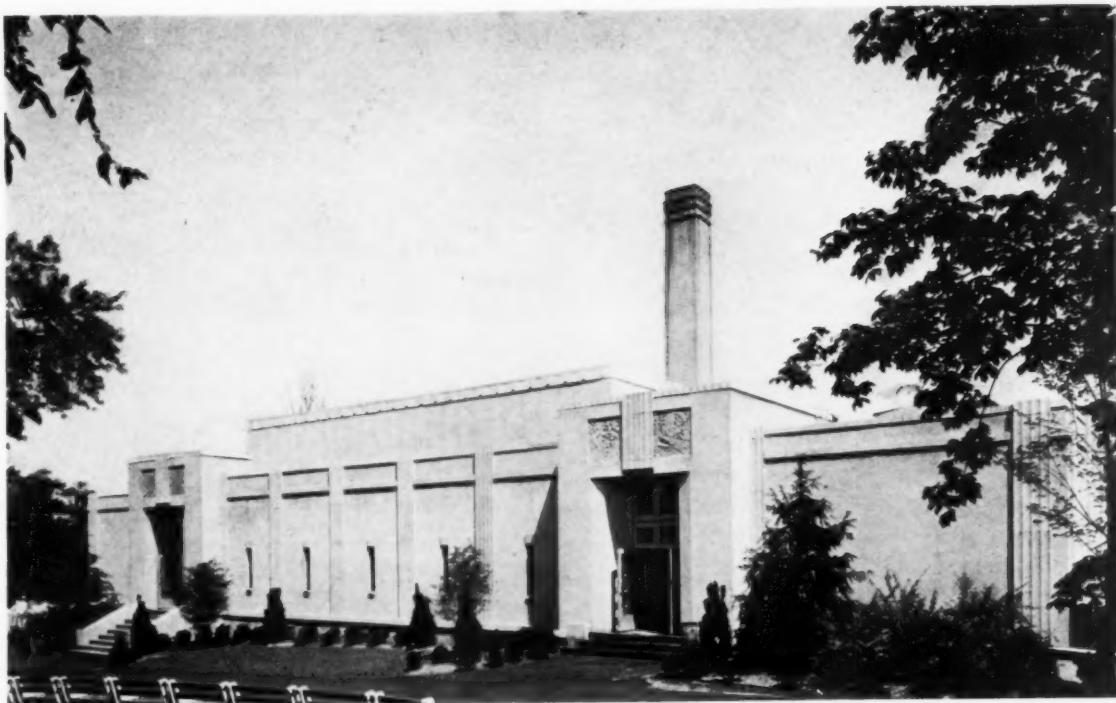


Looking down the Bar toward main entrance.

Aside from the Spiral Bar and Fountain, the Casino has a straightforward and functional plan. A wise use of color, well-selected stock furnishings and indirect lighting strike the "luxury" note required, with a minimum of special equipment. This characteristic treatment reaches

a high point in the Restaurant, which is completely free of both pattern and ornament, relying for brilliance upon the lighting — it has as well equipped a projection booth as most theaters—and the audience itself. All attention is thus concentrated on stage and dance floor.

NO SNAKES COMFORTABLY HOUSED IN NEW CINCINNATI STRUCTURE



Summer and winter quarters for turtles and alligators are included in this reptile house at Cincinnati's Zoological Gardens.

Photos by Acme



The Alligator Swamp



Typical cage for large reptile.

FECHHEIMER AND IHORST

Architects

THE HOUSING of reptiles presents several problems to the building designer. Aside from duplicating the snake's native environment—in terms of temperature, sunlight, humidity—and providing adequate facilities for their hospitalization, feeding, etc., there is the problem of properly displaying them to the public. In this new Reptile House for the Cincinnati Zoological Gardens, the architects have achieved a satisfactory solution, particularly in the matter of display. Illumination, both natural and artificial, is concentrated in the cages themselves rather than in the public spaces. Thus confusing reflections in the cage fronts are practically eliminated and the reptiles themselves—rather than the "architecture"—constitute the main point of interest. Natural habitats were accurately reproduced by PWA artists as a result of research into the natural life of each exhibit.

The structure, conventionally symmetrical in plan, provides for adequate servicing of the reptiles by a small staff. It is fireproof throughout, with exterior walls of cinder concrete and stucco; trimming is of cast stone; all metal work is aluminum.

LOS ANGELES BUILDS A SCHOOL FOR THE CRIPPLED



Photos by Mott Studios



A functional loading platform replaces the usual monumental steps in this school for crippled children. Notice guard rails—a necessary protection against falls.



Main entrance

AS PART of its program for reconstruction of the public school system, Los Angeles recently opened the Washington Boulevard Orthopaedic School. Designed for the crippled school population of the entire city, the structure not only incorporates many features new to school design but is itself only the nucleus of a new type of educational activity. Thus, while physicians, nurses, and dieticians were added to the teaching staff within, a staff of bus drivers were equally important without; and while stairs gave way to ramps, and physiotherapy and rest rooms were added inside, primary importance attaches to the loading platform outside with its fleet of busses.

In the Orthopaedic School, the designers employed a standard single-floor elementary school layout. But since the school children require regular rest periods, special diets, medical attention, and special toilet facilities, it was necessary to include provisions for them in the plan. The structural system is of reinforced concrete, fireproof and quake-resistant. There is relatively little fixed equipment and most of it is specially designed. The floors are all of non-slip asphaltic tile; the ceilings are acoustically treated.

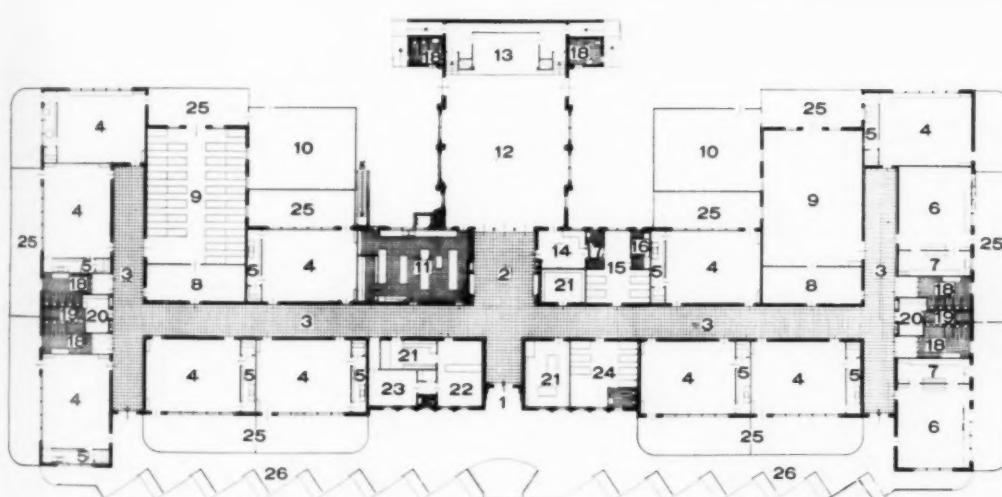
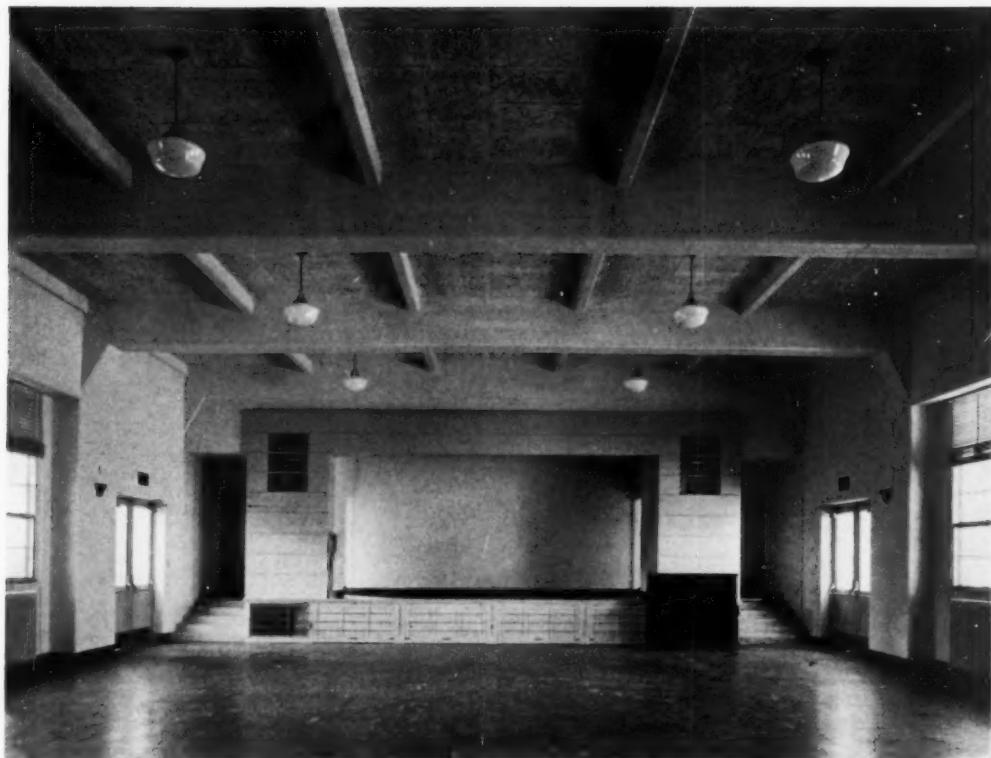
W. F. RUCK,

Architect

ZARA WITKIN,

Engineer

Absence of fixed seating—an essential for the crippled—permits a multiple use of the auditorium, which also serves as cafeteria, reading, and study room.



1. Entry
2. Foyer
3. Corridors
4. Classrooms
5. Wardrobes
6. Physiotherapy
7. Storerooms
8. Wheel chair storage
9. Rest rooms
10. Sun bathing
11. Diet Kitchen
12. Auditorium
13. Stage
14. Matron
15. Physician, Nurse
16. First aid
17. Special toilet
18. Toilets
19. Plumbing
20. Janitor
21. Supplies
22. Waiting room
23. Principal
24. Teachers
25. Outside Classroom
26. Loading Platform



Typical classroom



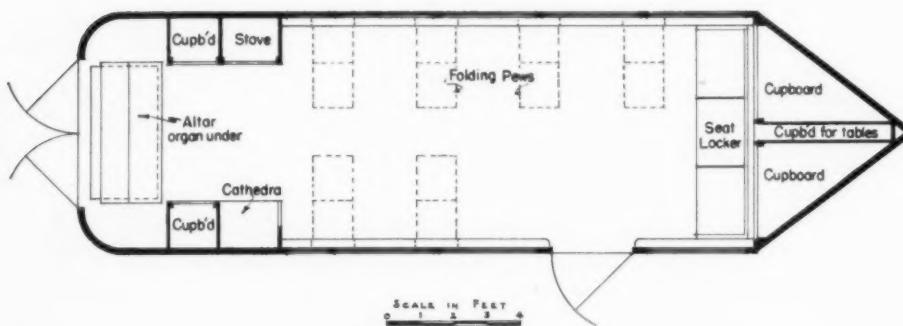
Typical rest room

MOBILE CATHEDRAL TO FOLLOW SHIFTING PARISHIONERS



Photos by Paul Briol

Traditional principles of church design are wholly missing from this trailer Cathedral, with a structural system based on airplane design, a stressed steel skin and fabric covered roof; even its three-point suspension—one of which is the air-cushioned coupling in the deck of the tow car—emphasizes its lightness and mobility.



WHEN, last month, St. Paul's Cathedral in Cincinnati christened its new mobile church, it consciously acknowledged the increasing mobility of American life. The Episcopal Diocese of Southern Ohio is fairly typical of most dioceses in the Middle West in that the population is very largely suburban, widely scattered in small towns and villages, and as compared to eastern dioceses the parishes are small and poor. Moreover, the Cathedral in Cincinnati, built shortly after the Civil War, was not only poor in design, but was becoming very expensive to maintain on account of its age. That part of Cincinnati which it served has changed considerably during the last 25 years, with the result that the number of its communicants has been slowly but steadily declining as that of the outlying suburban parishes increased. *In other*

words, the Cathedral, in Bishop Hobson's opinion, had outlived its usefulness not only as a church building, but also as a factor in the diocese.

The abandonment of the present Cathedral and the building of a new one in a more advantageous location would have meant the raising of a large building fund and, as the Bishop said, even had this been possible, he would not have known either how much he should spend or where the Cathedral should be placed, as changes and shifting of population are still factors, and it would be very difficult to select a site which 50 years from now would be still the proper one for the Cathedral. It was in the face of these facts that Bishop Hobson conceived a mobile cathedral and got the approval of the Diocesan Convention to build one.

NORMAN R. STURGIS,
Architect

Dignified and efficient, the interior is free of all but the most essential ecclesiastical detail—the carved altar front, the pierced screen over the altar and the two small stained glass panels on either side. All woodwork and furnishings are of walnut, the floor is a matching jaspe linoleum, the ceiling an off-white.



Indirect illumination in the cornice is on the 110-volt circuit that supplies organ, amplifying system and movie; but an auxiliary 6-volt battery system in the ceiling serves when commercial current is not available. The heater is in the cabinet opposite the Bishop's chair.



Mobility almost certainly means multiple use of space and equipment, since area and weight are at a premium in any mobile structure. Recognition of this fact lies in every major element of the cathedral. While it may be used in inclement weather to seat 25 persons, it is primarily a nucleus for much larger audiences during fair weather. The altar can be reversed in order to face outward through the double rear doors. The carved front panel is removable to provide storage space for a Ham-

mond organ console, which when not in use is completely enclosed within the altar, but which can be wheeled out into the body of the trailer. An amplification unit and two speakers for the organ are installed behind pierced panels in the upper part of the altar, supplemented by a horn placed on the roof outside for use in outdoor services. A portable standard microphone is also carried. Provisions are made in the forward end for storage of a complete moving picture projector.

LONG ISLAND CHURCH DE-MODERNIZES ITS INTERIOR

RICHARD H. SMYTHE
Architect



FROM the pulpit of Caroline Church, Setauket, Long Island, a Revolutionary preacher shouted to a group of British soldiers in the congregation: "Here am I preaching the blessed Gospel to you and there are your damned redcoats stealing my potatoes!" The church has just been restored to the aspect it had when this episode took place. Since its erection in 1929, Caroline Church interior has undergone three remodelings, although its exterior remains the same as in Colonial days. The first change was made in 1844, when, in the interests of easier heating, false walls and ceilings were introduced. In 1888 further alterations of the original style were imposed. In 1908 the interior was done over in the then prevailing "Gothic" mode, with dark woodwork, "modern" light fixtures, and steam radiators. The one part which was not structurally changed in these various incarnations was the old Slave Gallery, built in 1744 to furnish pews for slaves of the parishioners. When in 1934 it was decided to restore the church to its Colonial appearance, indications of the existence of a barrel ceiling were uncovered. The present ceiling replaces as nearly as possible this earlier one. Hidden up to now by plaster, hand-hewn oak timbers, columns, beams and ship's knees, evidence of the influence of ship's carpenters, were also found, and restored to their original use.

In the "new" interior, walls, ceilings, and panels are painted off-white, and the old beams are treated to appear whitewashed. The wall behind the altar, the altar itself, the pews and pulpit are all in harmony with the Colonial design of the building. The old whale-oil lamps, wired for electricity, appear in their pristine form. A new heating unit and ventilating system replaces the steam radiators.



Interior before remodeling

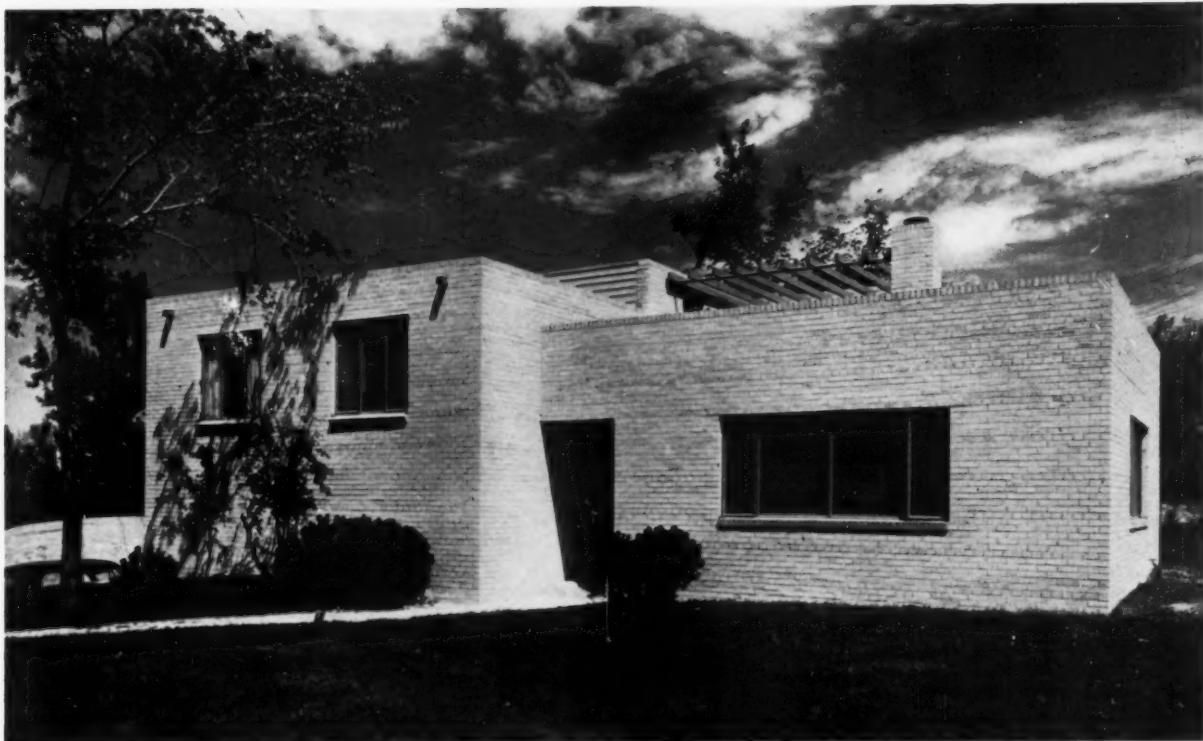


Interior restored according to original design

BUILDING
NEWS

OR COLORADO HOUSE EMPLOYS STAGGERED FLOOR LEVELS

YTHE



CASPER FORMAN HEGNER,
Architect



Living room with stairway to bedrooms



Master bedroom and dressing room



BUILT ON high ground overlooking Denver's famed mountains is this house for Mr. and Mrs. Chapman Young, Jr. The architect has nicely solved the problem of placing bedrooms on a different level from living area without using two full stories. Stairs leading up to sleeping rooms and roof and down to cellar are placed along the dividing wall in a clean-cut arrangement which is not only pleasing but efficient. Part of the roof is used as a sundeck; a sheltered portion allows for storage of roof furniture. Most of the furniture is built in: beds, dressing counter in child's room, desks and bookshelves in living room, radio, cabinets in dining room, all kitchen equipment, and lavatory and tub in bathroom. Interior walls are knotty pine, or panels of fir and mahogany plywood, and floors are common oak. The only plaster used in the house is for decoration on the fireplace. The house is completely insulated, even to sound insulation between all rooms.

RESEARCH INTO ATMOSPHERIC CONTROL GOES ON APACE

Johnston & Johnston Photo—Courtesy Koppers Company



Actually designed for flooding, the roof of the J. C. Penney building in Milwaukee, Wis., supports a body of water which satisfactorily insulates the building against summer heat. Structural problems arising from expansion and contraction have so far prevented a year-round use of flooded roofs.

Coconut-Shell Carbon Effectively Removes Odors

OF GROWING interest to the building designer faced with the problem of odor control in air conditioning, are developments in the use of coconut-shell activated carbon. (For earlier reports on the subject see RECORD, September 1937, p. 25). Although the activity of this material toward water vapor is almost negligible, it has a very active adsorptivity toward hydrocarbons and organic gases, according to F. H. Munkelt in *Refrigerating Engineering*. Because of its high adsorptive properties, coconut-shell activated carbon makes for long life between revivifications (usual service life is from three to five years), low operating cost of the odor remover, and smaller span requirements for equipment.

The most suitable location for this equipment is on the return-air duct, rather than on the supply duct, because a smaller quantity of air is treated, and odors are removed before they can contaminate filters, washers, or coils. Since odors in a certain degree of concentration are not particularly noticeable to the olfactory nerves, it is sufficient to remove the odor from only a portion of the air. In most cases, treatment of an amount equal to that deducted from the new air supply and added to recirculation produces the desired effect.

By using a bypass with a separate fan of proper capacity to handle the amount to be treated at the resistance of the odor adsorbers, the main fan load

will not be increased. The apparatus consists of a number of small canisters with a capacity of 20 to 40 cfm each, attached to a manifold plate which is installed in the duct. With almost the same cross-sectional area as for a dust filter, there is no increase in resistance. A filter placed in front of the adsorbers prevents dust accumulation on adsorbers which would cause a change in resistance and reduce the time between necessary cleaning.

Human Thermostats Tell Air Conditioning Needs

FINGERS and toes, thermostats of the human body, regulate the dissipation of heat from the body to equalize heat loss and heat production, says Dr. Charles Sheard of the Mayo Clinic and Foundation. Of interest to air conditioning engineers is the indication that with increased production of bodily heat, there is a change in the amount of blood brought to the surfaces of the body. The peripheral vascular systems of the fingers and toes accomplish the accuracy of regulation within comfortable ranges of temperatures and humidities.

Tests were carried out on subjects, in a basal metabolic state, as well as after exercise, change of position, and ingestion of food, over a considerable period of time. Effects of sudden temperature changes on skin temperatures of various parts of the body were studied by means of thermocouples fastened to the subject's great toes, knees, middle fingers, wrists, and forehead. Lead wires were so arranged that the subject could be quickly moved from one room to an-

other. Temperature readings were taken by an operator at a central switchboard. It was found that rising temperatures (giving off of heat to maintain internal constancy) are generally manifested first in the fingers, while falling temperatures (conservation of heat) are first evident in the toes.

Giant Molecules Make Water Wetter

WATER made wetter by the addition of a new synthetic alcohol produced from the waste gas of oil wells was announced last month by Mellon Institute's B. G. Wilkes and Carbide & Carbon Corporation's J. N. Wickert. The development is of special importance to designers of industrial plants in which dusty atmosphere is a health hazard; the "wetter water" will instantly soak every dust particle it touches. Ordinary water just glances off the dust particles, giving only partial air clearance. The new product does other things too, claim its developers: it enhances the deadliness of insect and bug sprays, then turns around and removes the poisons left on the fruit by such sprays. Its main uses are industrial and include conditioning of cotton yarn and fabric; dyeing and felting of wool; bleaching and mercerizing.

Glass Lips Show Phone Germs Aren't Dangerous

GERMS on telephone mouthpieces are not so deadly as the air in telephone booths or crowded theaters, say Drs. Calvin B. Coulter and Florence M. Stone of the DeLamar Institute of Public Health at Columbia's College of Physicians and Surgeons. Recent tests made with glass lips designed to imitate the action of human lips showed that neither frequency of use nor geographical location had any effect on the bacteria count on the mouthpieces.



Structurally independent of the house it covers, this cantilevered concrete roof shown at the Düsseldorf exposition is designed to protect a house against tropical sun.

NEW STANDARDS SOUGHT IN MANY FIELDS

Tests on Joint Fillers Show Capacity of 12 Materials

TESTS on expansion joint fillers conducted by the National Bureau of Standards resulted in conclusions on permeability, durability, behavior, and resistance to fatigue of 12 distinct types of materials. All fillers with a rubber content (except the rubber and asphalt combination) showed marked hardening effects, says the *Technical News Bulletin* of the Bureau of Standards. Extruded rubber types of fillers gave from fair to good indications, but sponge rubber and rubber-bound cork, in most of the tests, showed up poorly, causing leaky conditions and rather small joint openings. Fairly satisfactory results were obtained in most of the rubber latex tests. High temperatures affected the rubber and asphalt mixture, which stayed in the joint with difficulty.

FTC Aids in War on Spurious Air Conditioners

TO REDUCE the number of fraudulent "air conditioners" now on the market, the Federal Trade Commission has allied itself with manufacturers of air conditioning equipment and public utilities companies, in a war against misleading advertisements. Many of the advertised air conditioners are merely fans in fancy cabinets, with water-vaporizing attachments. A definition drawn up by the Air Conditioning Manufacturers Association states that the functions of true air conditioning are to clean, circulate, heat or cool, and humidify or dehumidify the air.

Accelerated Aging Tests Fibrous Materials

AS PART of its general study of building materials, the National Bureau of Standards is investigating the effects of serious artificial weather changes on fibrous compositions such as insulating and wall boards. By means of accelerated weathering tests, which include temperature, humidity and light changes, the Bureau will see how these changes create distortion, expansion, and contraction, cause mold growth, vary the moisture resistance and decrease the strength of the materials.

ASA Defines Standard Terms for Acoustics

A SET of American Tentative Standards of Acoustical Terminology, recently drawn up by a committee of the Ameri-

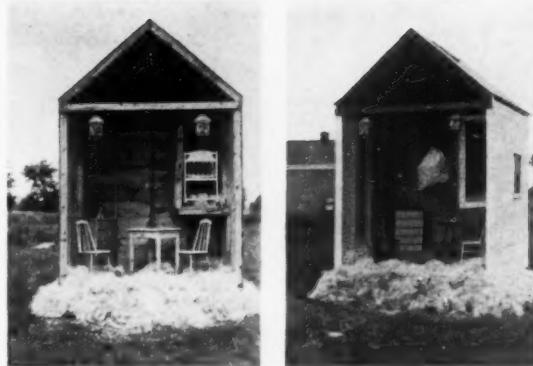
can Standards Association, and headed by H. A. Frederick of the Bell Telephone Laboratories, includes a section on terms used in Architectural Acoustics. Intended to dispel confusion of terms by giving standard definitions of such expressions as acoustic reflectivity, absorptivity, and transmittivity which are of special interest to architects, the report also contains material on hearing, sound transmission and transmission systems.

NRDGA Acts to Standardize Colors

MOVING toward standardization of colors, the National Retail Dry Goods Association has initiated a program whose purpose is to provide a basis for agreement on those colors known to be in greatest demand, without restricting the production of other colors. NRDGA's movement was activated by the fact that the 14 shades of Delphinium Blue now on the market complicate too much the problem of color matching. Almost as many different shades exist in other popular colors. The Trade Standards Division of the National Bureau of Standards at the request of NRDGA is acting as central agency in coordinating the program of color standards.

Bonderizing Makes Window Frames Rust-resistant

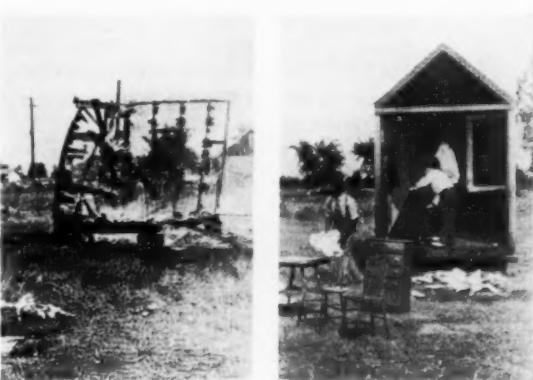
THE bonderizing process, which produces a non-metallic, rust-resisting surface, is now applied for the first time to steel windows by the Detroit Steel Products Company. The process has been used over a period of years in automotive and refrigeration industries, and required modification before it could be applied to steel window manufacture on a production basis. In conjunction with the Parker Rust-proofing Corporation and the Du Pont de Nemours Corporation, the Detroit Steel Products Company perfected the process for use on its Fenestra steel windows. These products are now completely bonderized in two and a half hours. The steel frames are cleaned in hot alkali solution to remove all foreign matter, then rinsed, submerged in Bonderite solution, rinsed again, and air dried. They are then dip-painted at a uniform controlled temperature, and oven-baked to dry and toughen the priming coat of paint, which, says the manufacturer, lasts three to five times longer than without the bonderizing process.



No. 1
No. 2
These houses—No. 1 untreated, No. 2 flameproofed—were set afire to test a new paint.



No. 1
No. 2
7 minutes later. No. 1 burns merrily; shavings gone, fire in No. 2 is out.



No. 1
No. 2
23 minutes later. No. 1 is destroyed; furniture inspected in No. 2.

U. S. FLAMEPROOF Manufacturing Corporation recently built and burned two houses in Detroit to demonstrate the efficiency of its new flameproofing compound. As yet unnamed, the product flameproofs not only the structure but interior finish, textiles and furniture as well. It may be applied like lacquer atop any finish, and laboratory tests indicate that it may also soon be mixed with the finish itself. Both process and inventor were imported from Germany.



Stran-Steel's 'Composite Panel' at start

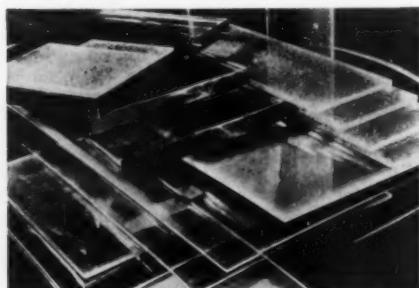


... and finish

MOST significant aspect of Stran-Steel's low-cost house opened last month in Detroit was the canny merchandising theory behind it. For, though the skeleton (joists, studs, rafters, plates) were Stran-Steel's, the panels were shop-fabricated of materials available in any lumber yard—rough lumber, rigid insulation board, plywood and stock doors, and sash. Further recognition of the lumber yard's strength lay in announcement that henceforth all Stran-Steel is available only through them. (See August 1937 RECORD, pages 34 and 86, for other developments.)

Plasticized Wood in Offing

RUMORED for early commercial distribution is a liquid plastic which will be used to impregnate composition board and wood, and render them fire



Eventually more than gadgets

NEW DEVELOPMENTS IN BUILDING MATERIALS

resistant, water- and weatherproof. (For report on impregnation of wood with metals see RECORD, July 1937, p. 38.) Although plastics in the form of door knobs, light louvers, furniture, etc., have long been familiar to the building industry, their use in larger panels has so far not been practical because of expansion and contraction of the material. That the producers of plastics consider the building industry one of the largest outlets for their material is evidenced by the constant laboratory experiments directed toward the development of materials for this field.

Sweet Pecan Offers New Cabinet Wood

ALREADY more famous for its lumber than its Huey Long, Louisiana now claims the latest cabinet wood. The sweet pecan, long a despised member of the hickory family, has within the

Not to be confused with its nut-bearing cousin, the sweet pecan is indigenous to the Gulf States and is particularly plentiful in the rich Louisiana Delta.

past year been proved an equal to any cabinet wood in the country, according to H. V. Sonderegger, Louisiana State forester. Kiln-dried by a new process, sweet pecan becomes a cabinet wood which, when finished, can be distinguished from walnut only by an expert.

Knotless Lumber Now in Sight

EARLY pruning of forest trees may bring about the production of knotless lumber, according to scientist Benson H. Paul of the U. S. Forest Products Laboratory, for it is the side branches on trees which are responsible for knots. Branches should always be removed with a saw, he says, as a smooth cut close to the trunk permits immediate formation of clear lumber. Early pruning leaves small scars and restricts them to the center of the tree. Lack of sunlight will cause branches to decay and drop to the ground, leaving irregular stubs on the trunk which may not be enclosed by new growth layers for 50 or 100 years. These broken branches appear as knots when the trees are cut for lumber.

Curved Wall Board Sections Solve Corner Problems

CURVED sections of Beaver Board have recently been made available by the Certain-teed Products Corporation. Sections of Bent Board are semi-circular, with diameters of 6", 12", 18" and 24", and are manufactured in lengths up to 8 feet. This new product is designed to eliminate corner joinings.

Aluminum Coat Makes Steel Weatherproof

OF SIGNIFICANCE to the building field is a recent process patented by Columbia University—that of producing aluminum-coated steel. Perfected over a year ago by Columbia's Colin G. Fink, the process results in a product which "combines the high corrosion resistance of aluminum with the great tensile strength of steel." Aside from threatening "to take the place of tin plate and galvanized iron," aluminum steel has many other possibilities such as bridge construction. Steel wire, with a tensile strength of 460,000 lb. per sq. in. can now be protected by aluminum (tensile strength: 3,000 to 4,000 lb. per sq. in.); painting can be eliminated, upkeep greatly reduced.

Puzzled Scientists Study Metal Structure

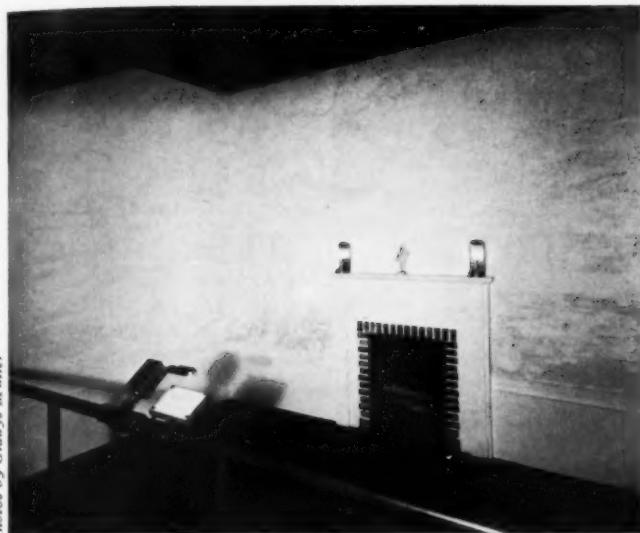
MORE POWERFUL engines and lighter airplanes may result if a solution can be found for the puzzles in structure of metallic phases, discussed by 150 scientists at Cornell University's recent symposium on metals. (Phases are those changes that go on even in solid metals and make them strong or weak.) One such unseen "reaction" is the movement of electrons in cold metal. The electrons, which travel around in a metal at a rate a thousand times as fast as the velocity of sound (1,090 feet per second), according to J. C. Slater of M. I. T.'s Physics Department, have much to do with the practical steelmaker's results. Also puzzling to the learned men are the phenomena of disordered shapes into which metallic crystals "freeze" when cooled to a solid from a molten state. Still another unsolved problem which confronts scientists is the tendency of hard metals to behave like a cup of coffee in which sugar is dissolving. In alloys, even after both metals have begun to harden, one metal dissolves in the other.

Paint Pigments Respond to Electrostatic Field

PAINT PIGMENTS placed in an electrostatic field assume electrical characteristics of different kinds depending on the nature of the vehicle. Studies of this phenomenon may lead to improvements in methods of compounding ready-mixed paints, says *Scientific American*. Zinc oxide pigments are attracted to either of the two poles or dispersed between them, depending on the character of the oil in which it is ground. Electrostatic response also depends on the age of the pigments.

INCREASED CONTROL OF LIGHT IN NEW EQUIPMENT

Photos by Gladys Müller



INVISIBLE UNDER ORDINARY LIGHT BUT BRILLIANT under ultraviolet, this new fluorescent mural by Charles Bittinger adorns the walls of Philadelphia's Franklin Institute. Using the Institute's own formula for the paint, with

glue for a binder, muralist Bittinger painted a mural which he could see only in the dark. (The brush marks showing in picture at left are visible only to the camera.) The display, operated by the visitor, is one of more than 4,000.

Inexpensive Black Light Now Available

NECESSARY accessory to luminescent paint is a black, or near ultraviolet, lamp; and, to meet the demand for an inexpensive source of black light, Science Laboratories, Inc., of Cincinnati, Ohio, recently announced its Sperti Black Lamp 200. This special mercury vapor lamp is enclosed in dark glass designed to screen out all visible light and pass only the invisible rays (near ultra violet in the spectrum). The lamps operate in any position, can be flashed on and off, will start and operate in extreme heat and cold, and—according to the manufacturer—attain maximum efficiency in 15 seconds after plugging in on 110-volt, 60-cycle A.C.

Automatic Laundry Does Everything but Hang Clothes

A COMPLETELY automatic home laundry developed by Bendix Home Appliances, Inc., of South Bend, Indiana, not only washes and rinses clothes but pre-soaks and damp-dries them. The machine, compact in size, may be connected with flexible hoses to hot and cold faucets and stationary tubs, or plumbed directly to hot- and cold-water pipes and the house drain. Two dials mounted on the front of the cabinet control the water temperature for soaking, washing, and rinsing, and the length of time required for the complete cleansing and damp-drying operation. Once the controls are set, the machine needs no further attention. All action stops after the final drying spin.

New Lamp Gives Sterilized Cakes

LATEST NEWS in bakery design is the new Sterilamp, whose germicidal rays effectively retard natural spoilage in cakes and bread. When a current is passed through the lamp—actually a low-wattage gas-filled electrical conductor in the form of a long glass tube—it produces radiations outside the spectrum of visible light, which swiftly sterilize the mold spores in the air. In the Columbus, Ohio, plant of the Kroger Grocery and Bakery Company, a recent Sterilamp installation has cut down spoilage of fruit cakes from 15% to 1% or 2%. Low initial and operating costs are expected to extend the commercial application of Sterilamps, since the power required for two lamps and one transformer is less than for an ordinary 25-watt bulb.

California School has New Color, Lighting Scheme

LIGHTING experiments in the schools of Sausalito, California, have determined a number of interesting facts about color schemes for classrooms. As a result of the thorough investigation carried on in an unused classroom, the color scheme of the first experimental classroom was derived. Walls, ceilings, and desks are finished in a neutral blue-gray tone, chosen because of its restful qualities. Writing boards are blue-gray also, and yellow chalk instead of the usual white is used. Venetian blinds are blue-gray on the bottom side, white on the top. Although the room

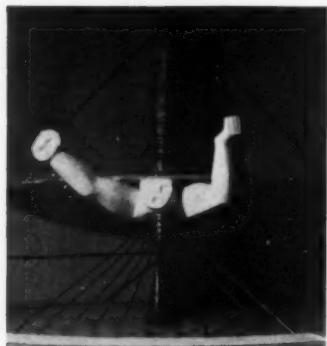
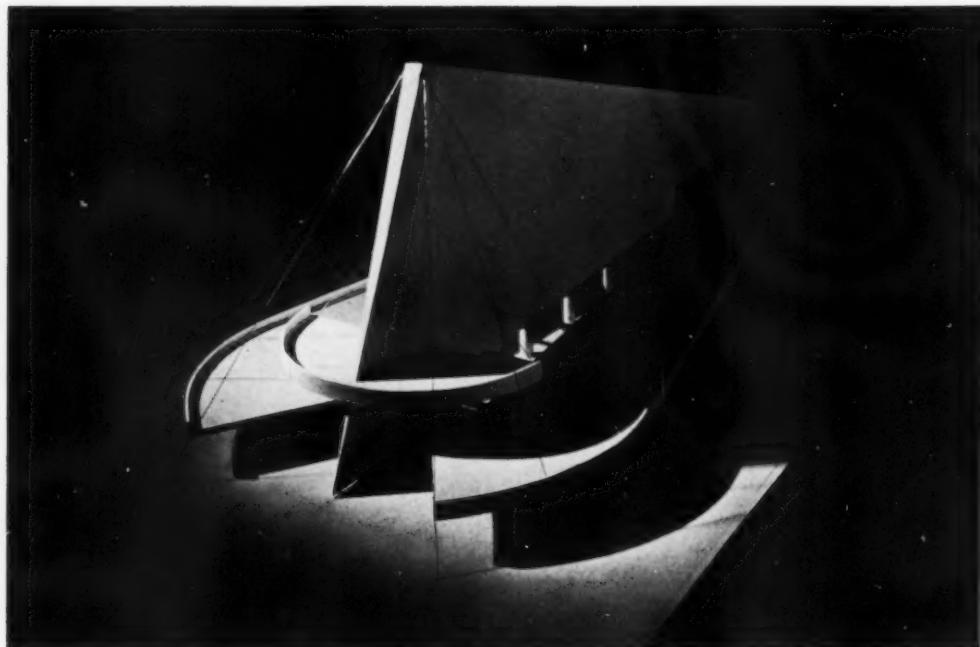
dimensions are only 23'x31', twelve 300-watt semi-indirect aluminum fixtures were installed: five along the windows, five along the wall, and one at each end between the rows. Two photoelectric relays, mounted on the window side of the room so as to pick up reflected light from the dark side, control the fixtures. A minimum of 40 foot-candles on the desk top is obtained by this installation.

Readings of these tests were carefully taken in the same position for each different combination of light and color, insuring an accurate comparison with other tests which are now being carried on in Sausalito.

New Instrument Measures Wiring Efficiency

AN INSTRUMENT to measure the efficiency of an electrical wiring system, in the same manner that the light-meter measures light intensity, is now almost available for commercial distribution, according to Earle Whitehorne, editor of *Electrical Contracting*. The flow of current over wires is measured by the instrument and expressed in terms of pressure. The gauge is first set up next to a home meter where current flow is 100%, and then at different distances from the box, giving a graphic record of loss of current caused by defective wiring and indicating approximately where the loss occurs. The instrument will form the basis for a nationwide drive by the International Association of Electrical Leagues against antiquated electrical systems and equipment.

FAIRS



Isamu Noguchi's "Labor"

Labor Pavilion at the Fair is the Technical Committee of FAECT; its slogan for the building is "Union financed, designed and built."

PROPOSED FOR THE NEW YORK WORLD'S Fair is this Pavilion of Labor. The design is the result of a collective reworking of the best ideas presented in a Federation Technical School competition. Distinguished by a light and frankly temporary construction, the Pavilion consists of two main elements: the booths for individual unions under the huge roof and a motion picture theater. Main external feature will be a huge mural symbolizing labor, on the fin which tops the building and rises 108' at its highest point. Only individual competition winner was Isamu Noguchi of the Artists' Union, whose sculpture, representing all unions striving toward "One Big Union", will adorn the main entrance. Sponsor for the idea of an American

Architectural Record



THE "NEO-DEMOCRATIC COMMUNITY OF THE FUTURE", AS THE New York Fair calls its Shelter Exhibit, will be a full-scale model village designed for a population of 3,500.

New York Fair Plans "Town of Tomorrow"

TO BE Fair-designed and Fair-built, the Shelter Exhibit at the New York World's Fair last month approached the construction phase with the approval of tentative plans. Slow to reach maturity, the design of "Tomorrow Town" is highly reminiscent of current subdivision practice. Based on the theory that the old New England type of village was as "perfect a form of democracy as the world has known," the Exhibit will contain homes for working-class as well as white-collar workers, for the purpose of encouraging a more perfect "flowering of democracy." Although far from being a complete community, present plans call for the erection of thirty to thirty-five houses and group houses, community arts center, nursery school, playground and stores. The layout is on the cul-de-sac plan, with parks at the rear of the houses. There will be twenty-one detached houses, three sets of group houses, a two-story eight-suite walk-up apartment and an eight-suite elevator apartment.

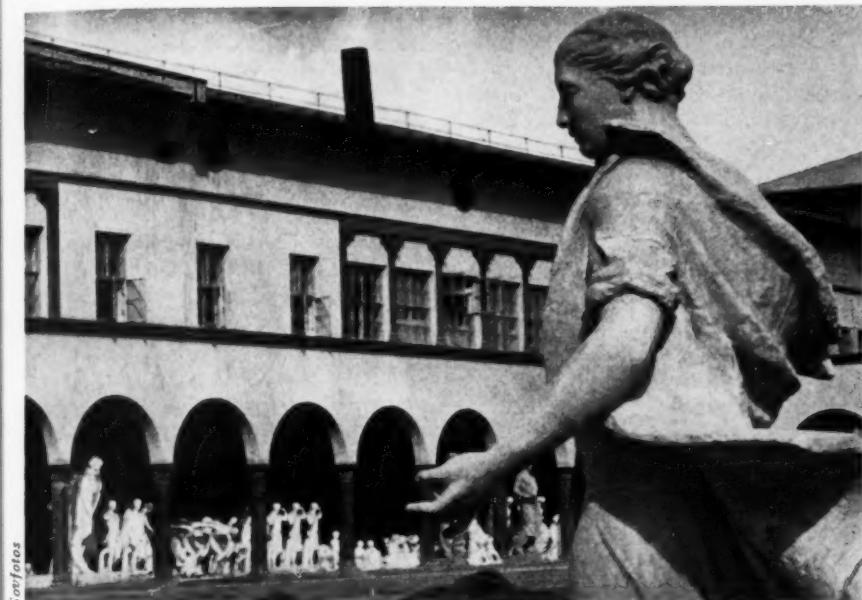
In accordance with the policy of the Board of Design, these buildings will be designed by Fair architects, not by individual companies. Manufacturers will buy parts of the model homes as a means of displaying their products: a roofing company will supply roofs for a number of houses; a brick manufacturer, the walls; a plumbing concern, all sanitary equipment. A number of architectural styles, and various types of building materials will be used, but unity, not uniformity, is the goal. Schedules showing cost of reproduction in various parts of the country will be prepared. As further demonstration of building methods, several houses will be continually under construction. Work done during one day will be demolished at night, repeated the next day.

San Francisco Plans Housing Show

CONVENTIONAL in display and more modest in size is the housing exhibit planned for San Francisco's Golden Gate International Exposition. The Homes and Gardens Building will contain demonstrations of the use of glass in construction and furnishing of houses. In addition to structural glass walls and partitions, it is expected that there will be built a room with ceiling and floor of glass. Also on exhibit will be stainless steel rooms (kitchen, living and bath) and an all-porcelain enamel kitchen. Already completed are the first two buildings of the future nucleus of the municipal air field.

BUILDING
NEWS

CULTURAL ACTIVITY HERE AND ABROAD



Soviet photos



A MOSCOW SCULPTURE "FACTORY" (left) and two typical uses of its output in a Black Sea steel plant. With the primary industrialization of the U.S.S.R. relatively complete, there is now both time and money for such projects as this one—the beautification of an industrial plant.



Soviet Sculptors Produce Art for the Masses

THE RAPID growth of all branches of art in the USSR—springing as it has from a steadily increasing public demand—has led to solutions characteristic of that industrially-minded nation. In order to meet demands, production methods for art work are scientifically analyzed and industrialized like those in any other field. Enterprises like the Moscow Sculpture Combinat are the result. Operated by a sculptors' collective which includes some of the Soviet's most famous artists, the Combinat has recently moved into its new quarters in the capital. Designed for a large potential output, the Combinat has all pro-

visions for the design and reproduction of sculpture in any medium, size or number.

Most startling to Americans, however, is the Combinat's attitude toward the sculpture itself. That it attaches no especial value to the "original" is clear in its advertisements—it advertises in many Soviet periodicals. It reproduces famous originals, executes designs to order, and has in addition a catalogued "stock" by its own staff. This last is important to many a remote section of the U.S.S.R., where rapid industrialization has as yet created neither the artists nor the facilities for sculpture.

Popular-Priced Art

Expanded in U. S.

TWO organizations last month continued and expanded their efforts in the field of mass production and distribution of art. Recently issued is the 1938 catalogue of representative works by Associated American Artists' fifty-three member artists. Already a sizeable organization although formed only three years ago, Associated American Artists adheres to its fixed price of five dollars each for signed original etchings and lithographs. In direct line with this work is the announcement of the American Federation of Arts that full color reproductions of the works of fourteen leading contemporaries are now available in portfolio form. On the roster are such names as Henry Varnum Poor, Millard Sheets, Winslow Homer, Maurice Sterne, and George Luks. On sale at \$8 for the collection, the reproductions are said by the Federation to attain a high degree of fidelity.

Photo by Bonney



ECOLE DES BEAUX-ARTS "WENT MODERN" IN ITS OWN INIMITABLE WAY at the Paris Exposition, which closed last month. Work of its students, the Ecole exhibit included sculpture symbolic of the fine arts.

NEW PUBLICATIONS

General

Aluminum Paint Manual. Aluminum Company of America, Pittsburgh, Pa.

An Illustrated Handbook of Art History. By Frank J. Roos. The Macmillan Company, 60 Fifth Avenue, New York City. Price, \$3.50.

A Treatise on Swimming Pool Design. By Louis J. Day and C. W. Stedman. Josam Manufacturing Company, Cleveland, Ohio. Price, \$1.00.

Every Day Science. By A. W. Haslett. Alfred A. Knopf, 501 Madison Avenue, New York City. Price, \$2.75.

Our Cities—Their Role in the National Economy. National Resources Committee. Washington, D. C. Price \$0.50.

Planning News, July-August. National Resources Committee, District 11, 220 Federal Court House, Portland, Ore.

Properties of Cements and Concretes Containing Fly Ash. By R. E. Davis, R. W. Carlson, J. W. Kelly and H. E. Davis. Reprinted from Journal of the American Concrete Institute, 7400 Second Boulevard, Detroit, Mich.

Shopping Districts. By S. R. De Boer. American Planning and Civic Association, 901 Union Trust Bldg., Washington, D. C.

Standards for Working Surface Heights and Other Space Units of the Dwelling. By Maud Wilson, Ruth Thayer and Evelyn H. Roberts. Washington and Oregon Agricultural Experiment Stations.

Steel Square Pocket Book. By Dwight L. Stoddard. Scientific Book Corporation, 15 East 26 Street, New York City. Price \$1.00.

Studies of Community Planning in Terms of the Span of Life. New York City Housing Authority.

Suggested Symbols for Plans, Maps and Charts, Revised April 1937. National Resources Committee, Washington, D. C.

The China Architects and Builders Compendium. The Publisher, North-China Daily News & Herald Ltd., Shanghai, China. Price, \$2.00.

The 1938 Book of Small Houses. By the Editors of The Architectural Forum. Simon and Schuster, New York City. Price \$1.96.

The Towers of New York. The Memoirs of a Master Builder. By Louis J. Horowitz and Boyden Sparkes. Simon & Schuster, New York City. Price, \$2.25.

The Working Class Home: Its Furnishing and Equipment. The British Library of Information, 270 Madison Avenue, New York City. Price, \$0.35.

Visualizing the Curriculum. By Hoban, Hoban & Zisman. Cordon Company, 225 Lafayette Street, New York City.

Structural Materials and Parts

Lupton Industrial Windows; Lupton Residence Casements. Michael Flynn Manufacturing Company, Philadelphia, Pa.

Sheathing and Subflooring of Douglas Fir Plywood. Douglas Fir Plywood Association, Tacoma, Wash.

The House You Live In. Revere Copper & Brass, Inc., 230 Park Avenue, New York City.

Equipment

Is the Low Temperature Incinerator Understood? By Junius C. Rochester. The Pyroneel Company, New York City.

Otis Geared Traction Machines with Unit Multi-Voltage Control; also for alternating current. Otis Elevator Company, New York City.

Air Conditioning,

Heating and Insulation

Barrett Rock Wool Insulation. The Barrett Company, 40 Rector Street, New York City.

Heat. The Story of Man's Struggle to Control Nature's Most Powerful Force. Johns-Manville Corporation, 22 East 40 Street, New York City.

Lee Direct-Fired Unit Heater, for Industrial Buildings. Dravo Corporation Machinery Division, Dept. AA, 302 Penn Avenue, Pittsburgh, Pa.

Electric Power and Lighting

Brown Pyrometers, Potentiometer and Millivoltmeter Types, for Indicating, Recording and Controlling. The Brown Instrument Company, Philadelphia, Pa.

Eye Comfort Luminaires. Curtis Lighting, Chicago, Ill.

CHANGE OF ADDRESS

The RECORD publishes changes of address only on request, making no attempt to keep a day-to-day account. Only organization in the country with facilities for this is Sweet's Catalog Service, whose painstakingly maintained list undergoes an average of 23 changes per day for every working day in the year.

T. Richard Shoaff, in association with Guy Mahurin, has opened an office at 402 Central Building, Fort Wayne, Indiana.

Stanley Worth Hahn, AIA, announces the opening of an office for the practice of architecture in the Muskegon Building, Muskegon, Michigan.

Robert Niles and C. Bertram French have formed a partnership under the firm name of Niles & French, for the practice of architecture, with offices at 449 Park Avenue, New York City.

Gerald S. Adelman and Benjamin X. Forester announce their association for the practice of architecture under the firm name of Gerald S. Adelman-B. X. Forester with offices located at 540 North Michigan Avenue, Chicago, Illinois.

Corrections October Issue

To the Belgian magazine, *L'Ossature Metallique*, should have gone credit for all photographs on page 33.

The photographs on page 39 are from Acme News Pictures, Inc.

All photographs on page 31 are from Bonney.

CALENDAR OF EVENTS

• November 3-December 3—Exhibition of Town Construction and Architecture of the Soviet Union, Architectural Library, Avery Hall, Columbia University, New York City.

• November 3-December 22—Lectures on Contemporary Housing and Re-housing by members of New York City Housing Authority. Wednesdays, 8:20-10:00 p.m. The New School, 66 West 12 Street, New York City.

• November 19-20—National Appraisal Forum, held by Joint Committee on Appraisal and Mortgage Analysis, Washington, D. C.

• November 23-30—Final week, competition for interior design and furnishing of living room. James H. Blauvelt, 38 East 57 Street, New York City.

• November 28—"Modern Types of Small Houses", lecture by Walter Gropius at Metropolitan Museum of Art, New York City.

DESIGN TRENDS



Robinson & Co.

SUNNYFIELD ESTATE, ENGLAND. Laing-built, see pages 66-71. This development by Architects A. W. Kenyon and T. Alwyn Lloyd was the result of a competition arranged with the London Architectural Association.

RECORD



Fairchild Surveys, Inc.

POUGHKEEPSIE, N. Y. (above); GREENHILLS, OHIO, urban neighborhood (right). "The block-by-block accretion of the big city, along its corridor avenues, is in all important respects a denial of the vastly improved type of urban grouping that our fresh inventions have brought in."



Resettlement Administration

What is a City?

By LEWIS MUMFORD

MOST OF OUR housing and city planning has been handicapped because those who have undertaken the work have had no clear notion of the social functions of the city. They sought to derive these functions from a cursory survey of the activities and interests of the contemporary urban scene. And they did not, apparently, suspect that there might be gross deficiencies, misdirected efforts, mistaken expenditures here that would not be set straight by merely building sanitary tenements or straightening out and widening irregular streets.

The city as a purely physical fact has been subject to numerous investigations. But what is the city as a social institution? The earlier answers to these questions, in Aristotle, Plato, and the Utopian writers from Sir Thomas More to Robert Owen, have been on the whole more satisfactory than those of the more systematic sociologists: most contemporary treatises on "urban sociology" in America throw no important light upon the problem.

One of the soundest definitions of the city was that framed by John Stow, an honest observer of Elizabethan London, who said: "Men are congregated into cities and commonwealths for honesty and utility's sake, these shortly be the commodities that do come by cities, commonalties, and corporations. First, men by this nearness of conversation are withdrawn from barbarous fixity and force, to certain mildness of manners, and to humanity and justice. . . . Good behavior is yet called *urbanitas* because it is rather found in cities than elsewhere. In sum, by often hearing, men be better persuaded in religion, and for that they live in the eyes of others, they be by example the more easily trained to justice, and by shamefastness restrained from injury."

"And whereas commonwealths and kingdoms cannot have, next after God, any surer foundation than the love and good will of one man towards another, that also is closely bred and maintained in cities, where men by mutual society and companying together, do grow to alliances, commonalties, and corporations."

It is with no hope of adding much to the essential insight of this description of the urban process that I would sum up the sociological concept of the city in the following terms:

The city is a related collection of primary groups and purposive associations: the first, like family and neighborhood, are common to all communities, while the second are especially characteristic of city life. These varied groups support themselves through economic organizations that are likewise of a more or less corporate, or at least publicly regulated, character; and they are all housed in permanent structures, within a relatively limited area. The essential physical means of a city's existence are the fixed site, the durable shelter, the permanent facilities for assembly, interchange, and storage; the essential social means are the social division of labor, which serves not merely the economic life but the cultural processes. The city in its complete sense, then, is a geographic plexus, an economic organization, an institutional process, a theater of social action, and an esthetic symbol of collective unity. The city fosters art and *is* art; the city creates the theater and *is* the theater. It is in the city, the city as theater, that man's more purposive activities are focused, and work out, through conflicting and cooperating personalities, events, groups, into more significant culminations.

Without the social drama that comes into existence through the focusing and intensification of group activity there is not a single function performed in the city that could not be performed—and has not in fact been performed—in the open country. The physical organization of the city may deflate this drama or make it frustrate; or it may, through the deliberate efforts of art, politics, and education, make the drama more richly significant, as a stage-set, well-designed, intensifies and underlines the gestures of the actors and the action of the play. It is not for nothing that men have dwelt so often on the beauty or the ugliness of cities: these attributes qualify men's social activities. And if there is a deep reluctance on the part of the true city dweller to leave his cramped quarters for the physically more benign environment of a suburb—even a model garden suburb!—his instincts are usually justified: in its various and many-sided life, in its very opportunities for social disharmony and conflict, the city creates drama; the suburb lacks it.

One may describe the city, in its social aspect,



PICKWICK LANDING, a TVA town where deficient planning permitted strewing of houses along a roadway cut without relation to schools, community centers, or even to its superb natural setting.

as a special framework directed toward the creation of differentiated opportunities for a common life and a significant collective drama. As indirect forms of association, with the aid of signs and symbols and specialized organizations, supplement direct face-to-face intercourse, the personalities of the citizens themselves become many-faceted: they reflect their specialized interests, their more intensively trained aptitudes, their finer discriminations and selections: the personality no longer presents a more or less unbroken traditional face to reality as a whole. Here lies the possibility of personal disintegration; and here lies the need for reintegration through wider participation in a concrete and visible collective whole. What men cannot imagine as a vague formless society, they can live through and experience as citizens in a city. Their unified plans and buildings become a symbol of their social relatedness; and when the physical environment itself becomes disordered and incoherent, the social functions that it harbors become more difficult to express.

One further conclusion follows from this concept of the city: social facts are primary, and the physical organization of a city, its industries and its markets, its lines of communication and traffic, must be subservient to its social needs. Whereas in the development of the city during the last century we expanded the physical plant recklessly and treated the essential social nucleus, the organs of government and education and social service, as mere afterthoughts, today we must treat the social nucleus as the essential element in every valid city plan: the spotting and inter-relationship of schools, libraries, theaters, community centers, is the first task in defining the urban neighborhood and laying down the outlines of an integrated city.

In giving this sociological answer to the question: What is a City? one has likewise provided the clue to a number of important other questions. Above all, one has the criterion for a clear decision as to what is the desirable size of a city—or may a city perhaps continue to grow until a single continuous urban area might cover half the American continent, with the rest of the world tributary to this mass? From the standpoint of the purely physical organization of urban utilities—which is almost the only matter upon which metropolitan planners in the past have concentrated—this latter process might indeed go on indefinitely. But if the city is a theater of social activity, and if its needs are defined by the opportunities it offers to differentiated social groups, acting through a specific nucleus of civic institutes and associations, definite limitations on size follow from this fact.

In one of Le Corbusier's early schemes for an ideal city, he chose three million as the number to be accommodated: the number was roughly the size of the urban aggregate of Paris, but that hardly explains why it should have been taken as a norm for a more rational type of city development. If the size of an urban unit, however, is a function of its productive organization and its opportunities for active social intercourse and culture, certain definite facts emerge as to adequate ratio of population to the process to be served. Thus, at the present level of culture in America, a million people are needed to support a university. Many factors may enter which will change the size of both the university and the population base; nevertheless one can say provisionally that if a million people are needed to provide a sufficient number of students for a university, then two million people should have two universities. One can also say that, other things being equal, five million people will not provide a more effective university than one million people would. The alternative to recognizing these ratios is to keep on overcrowding and overbuilding a few existing institutions, thereby limiting, rather than expanding, their genuine educational facilities.

What is important is not an absolute figure as to population or area: although in certain aspects of life, such as the size of city that is capable of reproducing itself through natural fertility, one can already lay down such figures. What is more important is to *express size always as a function of the social relationships to be served*. There is an optimum numerical size, beyond which each further increment of inhabitants creates difficulties out of all proportion to the benefits. There is also an optimum area of

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SCHOOL by Richard J. Neutra.

"Today we must treat the social nucleus as the essential element in every valid city plan: the spotting and inter-relationship of schools, libraries, theaters, community centers, is the first task in defining the urban neighborhood and laying down the outlines of an integrated city."

Resettlement Administration



ROW HOUSES, Greenbelt, Md.

expansion, beyond which further urban growth tends to paralyze rather than to further important social relationships. Rapid means of transportation have given a regional area, with a radius of from forty to a hundred miles, the unity that London and Hampstead had before the coming of the underground railroad. But the activities of small children are still bounded by a walking distance of about a quarter of a mile; and for men to congregate freely and frequently in neighborhoods the maximum distance means nothing, although it may properly define the area served for a selective minority by a university, a central reference library, or a completely equipped hospital.

The area of potential urban settlement has been vastly increased by the motor car and the airplane; but the necessity for solid contiguous growth, for the purposes of intercourse, has in turn been lessened by the telephone and the radio. In the Middle Ages a distance of less than a half a mile from the city's center usually defined its utmost limits. The block-by-block accretion of the big city, along its corridor avenues, is in all important respects a denial of the vastly improved type of urban grouping that our fresh inventions have brought in. For all occasional types of intercourse, the region is the unit of social life: but the region cannot function effectively, as a well-knit unit, if the entire area is densely filled with people—since their very presence will clog its arteries of traffic and congest its social facilities.

Limitations on size, density, and area are absolutely necessary to effective social intercourse; and they are therefore the most important instruments of rational economic and civic planning. The unwillingness in the past to establish such limits has been due mainly to two facts: the as-

sumption that all upward changes in magnitude were signs of progress and automatically "good for business", and the belief that such limitations were essentially arbitrary, in that they proposed to "decrease economic opportunity"—that is, opportunity for profiting by congestion—and to halt the inevitable course of change. Both these objections are superstitious.

Limitations on height are now common in American cities; drastic limitations on density are the rule in all municipal housing estates in England: that which could not be done has *been* done. Such limitations do not obviously limit the population itself: they merely give the planner and administrator the opportunity to multiply the number of centers in which the population is housed, instead of permitting a few existing centers to aggrandize themselves on a monopolistic pattern.

These limitations are necessary to break up the functionless, hypertrophied urban masses of the past. Under this mode of planning, the planner proposes to replace the "mononucleated city", as Professor Warren Thompson has called it, with a new type of "polynucleated city", in which a cluster of communities, adequately spaced and bounded, shall do duty for the badly organized mass city. Twenty such cities, in a region whose environment and whose resources were adequately planned, would have all the benefits of a metropolis that held a million people, without its ponderous disabilities: its capital frozen into unprofitable utilities, and its land values congealed at levels that stand in the way of effective adaptation to new needs.

Mark the change that is in process today. The emerging sources of power, transport, and communication do not follow the old highway network at all. Giant power strides over the hills,



WYTHENSHAWE, MANCHESTER, ENGLAND, A TOWN FOR 100,000. A permanent agricultural belt of 1,000 acres. Scattered open spaces comprise another 1,000 acres. A total open space of 1 acre to 50 people. Space for outdoor recreation including a 100-acre golf course. The park contains 250 acres. Two parkways with an average right-of-way of 300 feet. Sites are reserved for a civic center, schools, churches, shopping, and industry. The shopping districts are placed at the juncture of four "neighborhood units."

ignoring the limitations of wheeled vehicles; the airplane, even more liberated, flies over swamps and mountains, and terminates its journey, not on an avenue, but in a field. Even the highway for fast motor transportation abandons the pattern of the horse-and-buggy era. The new highways, like those of New Jersey and Westchester, to mention only examples drawn locally, are based more or less on a system definitively formulated by Benton MacKaye in his various papers on the Townless Highway. The most complete plans form an independent highway network, isolated both from the adjacent countryside and the towns that they bypass: as free from communal encroachments as the railroad system. In such a network no single center will, like the metropolis of old, become the focal point of all regional advantages: on the contrary, the whole region becomes open for settlement.

Even without intelligent public control, the likelihood is that within the next generation this dissociation and decentralization of urban facilities will go even farther. The Townless Highway begets the Highwayless Town in which the needs of close and continuous human association on all levels will be uppermost. This is just the opposite of the earlier mechanocentric picture of Roadtown, as pictured by Edgar Chambliss and the Spanish projectors of the Linear City. For

the highwayless town is based upon the not on of effective zoning of functions through initial public design, rather than by blind legal ordinances. It is a town in which the various functional parts of the structure are isolated topographically as urban islands, appropriately designed for their specific use: with no attempt to provide a uniform plan of the same general pattern for the industrial, the commercial, the domestic, and the civic parts.

The first systematic sketch of this type of town was made by Messrs. Wright and Stein in their design for Radburn in 1929; a new type of plan that was repeated on a limited scale—and apparently in complete independence—by planners in Köln and Hamburg at about the same time. Because of restrictions on design that favored a conventional type of suburban house and stale architectural forms, the implications of this new type of planning were not carried very far in Radburn. But in outline the main relationships are clear: the differentiation of foot traffic from wheeled traffic in independent systems, the insulation of residence quarters from through roads; the discontinuous street pattern; the polarization of social life in specially spotted civic nuclei, beginning in the neighborhood with the school and the playground and the swimming pool. This type of planning was carried to a logical conclusion in perhaps the most functional and most socially intelligent of all Le Corbusier's many urban plans: that for Nemours in North Africa, in 1934.

Through these convergent efforts, the principles of the polynucleated city have been well established. Such plans must result in a fuller opportunity for the primary group, with all its habits of frequent direct meeting and face-to-face intercourse: they must also result in a more complicated pattern and a more comprehensive life for the region, for this geographic area can only now, for the first time, be treated as an instantaneous whole for all the functions of social existence. Instead of trusting to the mere massing of population to produce the necessary social concentration and social drama, we must now seek these results through deliberate local nucleation and a finer regional articulation. The words are jargon; but the importance of their meaning should not be missed. To embody these new possibilities in city life, which come to us not merely through better technical organization but through acuter sociological understanding, and to dramatize the activities themselves in appropriate individual and urban structures, forms the task of the coming generation.

Housing Progress in America

By THOMAS S. HOLDEN, President, New York Building Congress; Chairman Special Committee on Housing, Merchants' Association of New York

THE WAGNER-STEAGALL HOUSING BILL (United States Housing Act of 1937) provides for a public housing program different in character and larger in scope than the recent PWA housing program. It offers financial aid to local housing agencies only. Private limited-dividend companies, not provided for in this Act, are making substantial progress with FHA-insured companies.

ARCHITECTS should find enlarged opportunities under the United States Housing Act of 1937, known during the period of Congressional debate as the Wagner-Steagall Housing Bill. Decentralized operation of the program, enlarged financial allocations for public housing, and a specific provision that "the wages or fees prevailing in the locality, as determined or adopted (subsequent to a determination under applicable State or local law) by the Authority, shall be paid to all architects, technical engineers, draftsmen, technicians, laborers, and mechanics employed in the development or administration of the low-rent housing or slum-clearance project"—all point in that direction. Smaller communities should get a good break in securing Federal assistance by reason of a stipulation that not more than 10 percent of total loan, capital grant, or annual contribution funds may be allocated to any one state.

Public Housing Agencies

PUBLIC HOUSING AGENCIES, and not the newly-created United States Housing Authority, will be initiators and owners of public housing projects hereafter, the role of the Authority consisting in rendering financial assistance. In its role as banker, the Authority will naturally have the power to impose conditions upon and to supervise locally initiated projects and, therefore, its administrative policies and procedure will determine the extent to which the intended decentralization is realized in actual practice.

A public housing agency, as defined in the Act, means any state, county, municipality, or other governmental entity or public body (excluding the Authority), which is authorized to engage in the development or administration of low-rent housing or slum-clearance. The Authority referred to is the United States Housing Authority, a body corporate of perpetual duration, the powers of which will be vested in and exercised by an Administrator, to be appointed by the President, with approval of the

Senate. The Authority is to be under the general supervision of the Secretary of the Interior, a fact that is causing some people to doubt the extent of decentralization, in view of the highly centralized control that has been exercised heretofore by the Housing Division of PWA. However, Secretary Ickes has long been on record as strongly favoring decentralization.

Financial Assistance

FINANCIAL ASSISTANCE to public housing agencies may consist of loans at low interest rates, capital grants, or annual contributions. A project may secure a loan and a capital grant, or a loan and annual contributions, but may not receive both capital grants and annual contributions. Thus, the way is paved for experimentation with several forms of subsidy. In all cases, Federal financial assistance will be contingent upon stipulated financial contributions by the state, city, county, or other political subdivision in which the project is situated. Projects will receive capital grants or annual contributions on condition that they include elimination by demolition, condemnation, and effective closing, or the compulsory repair and improvement of unsafe or insanitary dwellings situated in the locality or metropolitan area, substantially equal in number to the number of newly constructed dwellings provided by the project, except that such slum-elimination may be deferred when there is a low-rent housing shortage so acute as to force dangerous overcrowding.

The United States Housing Authority is authorized to make loans to public housing agencies up to a total of \$500,000,000, capital grants to a total of \$30,000,000, and annual contributions up to a total of \$20,000,000 a year, the maximum term of years being sixty.

Funds for loans, grants, and annual contributions are to be made available gradually over a three-year period. The loan-fund is to be obtained by selling bonds of the United States Housing Authority, guaranteed by the United

STATE AND LOCAL PREPAREDNESS FOR PUBLIC HOUSING AID

	Enabling Legislation	Tax Exemption Provided	State or Local Aid	No. of Local Authorities		Enabling Legislation	Tax Exemption Provided	State or Local Aid	No. of Local Authorities
Alabama	X	—	X	5	Nebraska	X	X	X	1
Arkansas	X	X	X	—	New Jersey	X	—	X	1
Colorado	X	X	X	1	New York	X	X	X	7
Connecticut	X	X	X	1	North Carolina	X	X	X	1
Delaware	X	—	X	—	North Dakota	X	X	X	1
Florida	X	X	X	2	Ohio	X	X	X	7
Georgia	X	X	X	1	Oregon	X	X	X	1
Illinois	X	—	X	3	Pennsylvania	X	X	X	1
Indiana	X	X	X	—	Rhode Island	X	X	—	1
Kentucky	X	X	X	5	South Carolina	X	X	X	2
Louisiana	X	X	—	1	Tennessee	X	X	X	2
Maryland	X	X	X	2	Texas*	X	X	X	1
Massachusetts	X	—	X	4	Vermont	X	X	X	1
Michigan*	X	X	X	1	West Virginia	X	X	X	1
Montana	X	—	X	1	Wisconsin*	X	—	—	1

States, to be issued as follows: \$100,000,000 on or after July 1, 1937; \$200,000,000 on or after July 1, 1938; and \$200,000,000 on or after July 1, 1939. Capital grants may be made as follows: \$10,000,000 after date of enactment; an additional \$10,000,000 on or after July 1, 1938; and a further \$10,000,000 on or after July 1, 1939. Annual contributions aggregating \$5,000,000 may be made after date of enactment; an additional \$7,500,000 after July 1, 1938; and a further \$7,500,000 after July 1, 1939. An appropriation of \$25,000,000 was made by Congress to provide a starting fund for grants and contributions.

How Much Housing?

THE CAPITAL GRANT fund of \$30,000,000, if the stipulated maximum of 25 percent of acquisition or development cost is granted in all cases (as is very likely), when matched with the other 75 percent, would produce \$120,000,000 worth of housing. The \$20,000,000 per annum of authorized annual contributions might represent

*In the states of Michigan, Texas and Wisconsin the operation of the authority is limited to the cities of Detroit, San Antonio, and Milwaukee, respectively.

No enabling legislation has been enacted in the following states: Arizona, California, Idaho, Iowa, Kansas, Maine, Minnesota, Mississippi, Missouri, Nevada, New Hampshire, New Mexico, Oklahoma, South Dakota, Utah, Virginia, Washington, Wyoming.

Local Authorities:

ALABAMA (Andalusia, Birmingham, Florence, Red Level, and Sheffield); CALIFORNIA (Los Angeles, by special provision of the city charter); CONNECTICUT (Bridgeport); FLORIDA (Jacksonville and Miami); GEORGIA (Atlanta); ILLINOIS (Chicago, Peoria, and St. Clair County); KENTUCKY (Lexington, Louisville, Frankfort, Newport, and Covington); LOUISIANA (New Orleans); MARYLAND (Baltimore and Annapolis); MASSACHUSETTS (Boston, Cambridge, Chelsea, and Lowell); MICHIGAN (Detroit); MONTANA (Billings); NEBRASKA (Omaha); NEW JERSEY (Newark); NEW YORK (Buffalo, Lackawanna, Port Jervis, Schenectady, Syracuse, New York City, and Yonkers); OHIO (Cincinnati, Cleveland, Columbus, Dayton, Toledo, Warren, and Youngstown); PENNSYLVANIA (Chester); SOUTH CAROLINA (Charleston and Columbia); TENNESSEE (Knoxville and Memphis); WISCONSIN (Milwaukee).

Local housing authorities have also been organized in the District of Columbia and Honolulu.

The above table is based upon a statement by Mr. D. H. Foley, Jr., General Counsel, Federal Emergency Administration of Public Works, to whom architects and architectural societies are referred for information on state and local legislation.

approximately \$550,000,000 to \$600,000,000 worth in addition. There is a question whether the \$500,000,000 loan fund would generate much, if any, additional building, since it could quite possibly be entirely used for loans to projects receiving capital grants or annual contributions. Public housing agencies, as yet with uncertain expectations of local financial support, may be counted upon to demand maximum Federal assistance. Yet a considerable amount of municipal housing is now being built in England with no assistance from the central government except low-interest loans.

If the Authority should succeed in putting out all its available funds on new housing within the next three years, and, particularly, if it should manage to generate many projects with less than maximum financial aid, it could conceivably produce 140,000 or more new family units during that period, an appreciable contribution to the total residential volume of those years, but an increment likely to be less than the increased number of privately built units. If the newly-created Authority uses an appreciable proportion of its financial resources to aid public housing agencies in acquiring existing Federally owned projects or other existing housing, the amount of new housing it would produce would be correspondingly reduced.

However, it has taken four years to produce 21,700 units under the first PWA public housing program. While difficulties of Federal organization and policy do not have to be gone through again, while there are 54 projects approved by the PWA housing division and waiting for funds, the local public housing agencies are scarcely ready, as yet, to meet the financial requirements to qualify them to receive capital grants or contributions under the Act.

Local Financial Responsibilities

TO QUALIFY for any capital grant, (Federal maximum is 25 percent of acquisition or development cost, to which the President may add 15 percent out of available employment relief funds), the public housing agency must add a 20 percent grant from the state or political subdivision thereof in cash, land, or the value, capitalized at the going Federal rate of interest, of community facilities or services for which a charge is usually made, or tax remissions or tax exemptions. The remainder of the acquisition or development cost may be borrowed from the Authority at the going Federal rate, plus one-half of 1 percent.

Loans up to 90 percent of acquisition or development cost may be secured by public housing agencies, whether or not they are accompanied by annual contributions, leaving 10 percent of the initial cost to be financed by state or local government agencies.

State or local government agencies must pay 20 percent of any annual contributions made to a public housing agency. Such annual contributions may total as much as a sum equal to the annual yield at the going Federal rate of interest, plus 1 percent, on the development or acquisition cost of the project; they may be made for any period up to sixty years, and must be applied first to payment of interest and principal of any loan owing to the Authority from the public housing agency. Under this plan, annual contributions of maximum amount and maximum period would practically pay the entire principal and interest on a maximum loan of 90 percent, but, by reason of required local contributions, a project could not be given *in toto* by the Authority to a public housing agency.

Cost Limitations

LIBERAL cost limitations are set on projects eligible for loans, capital grants, or annual contributions. Except in cities of 500,000 and up, costs on projects initiated hereafter are limited to \$4,000 per family dwelling unit, or \$1,000 per room; in the larger cities, the limits are \$5,000 per family dwelling unit and \$1,250 per room; average construction costs of the dwelling units (excluding land, demolition, and non-dwelling facilities) are not to exceed average construction costs of dwelling units currently produced in the locality or metropolitan area by private enterprise working under legal building requirements and labor standards similar to those of the public housing projects.

The United States Housing Act of 1937 does

not promise the gigantic program hoped for by many public housing proponents; it imposes upon public housing agencies responsibilities that many will at first find difficult to meet, but, at the same time, it offers Federal financial aid on a far more liberal basis than was ever offered by the central government of Great Britain. The Act, with its broad latitude as to methods of financial assistance, opens up an opportunity for developing a rational and reasonably economical pattern for public housing and slum-clearance, with the chance of gradually reducing Federal benefits as local public housing agencies acquire strength, experience, and the cooperation of practical citizens in the conduct of their operations.

Large-Scale Rental Projects Under FHA

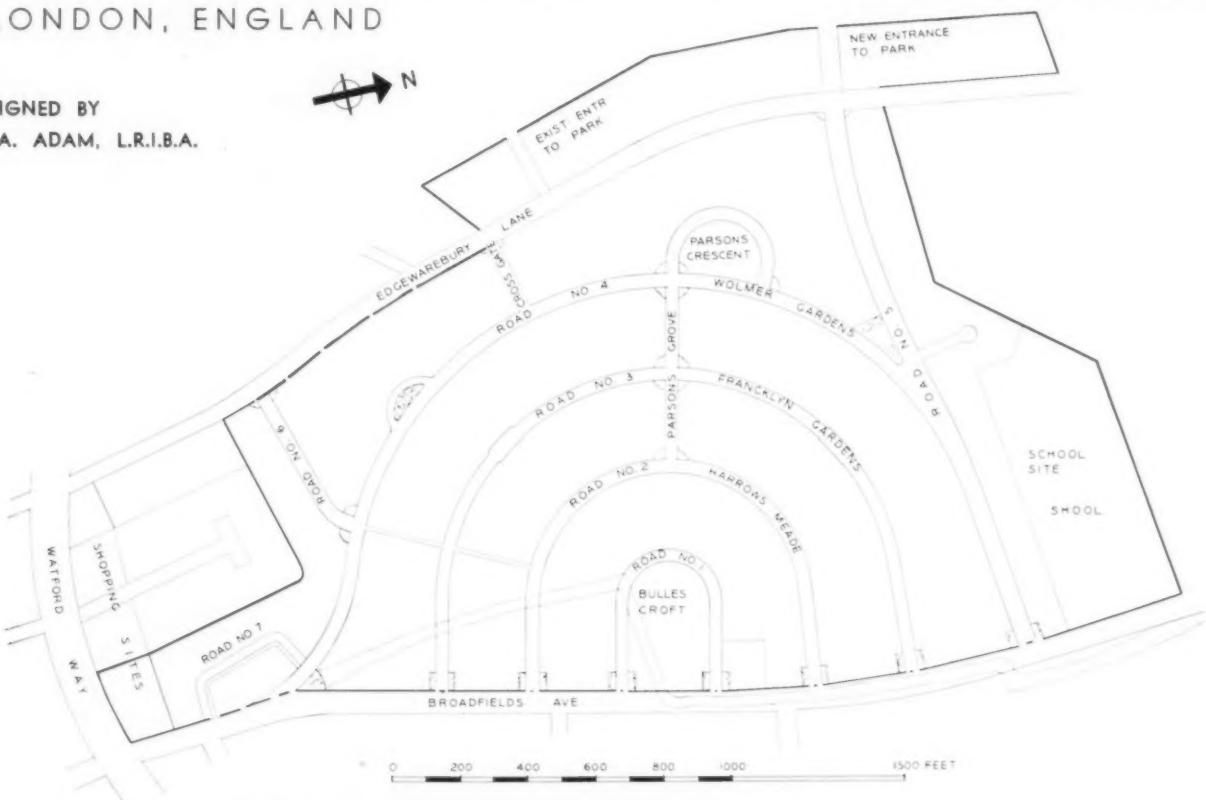
THE ACT, as finally passed, provided no authority for loans to limited-dividend corporations; for which, in view of progress that has been made in financing such undertakings in the FHA insured mortgage plan, there appears to be little need. Under this plan, twenty private enterprise rental housing projects, containing 4,417 family dwelling units, have been completed or put under construction, and four more (to accommodate 447 families) have had their financing arranged. Sixteen of the 24 mortgages have been taken by three life insurance companies—eleven by the New York Life Insurance Company, three by the Prudential Life Insurance Company, and two by the Union Central Life Insurance Company.

Most of these projects pay 7 percent annually on their mortgages, including interest, mortgage insurance, and amortization. The interest rate in nearly all cases is $4\frac{1}{2}$ percent on declining balances, and the insurance premium is one-half of 1 percent on the face of the mortgage. Rentals are well within the middle brackets. Since public housing agencies will probably pay not more than 5 percent for interest and amortization, their economic rents should be measurably under the rents charged by limited-dividend housing corporations financed under the FHA insured mortgage plan.

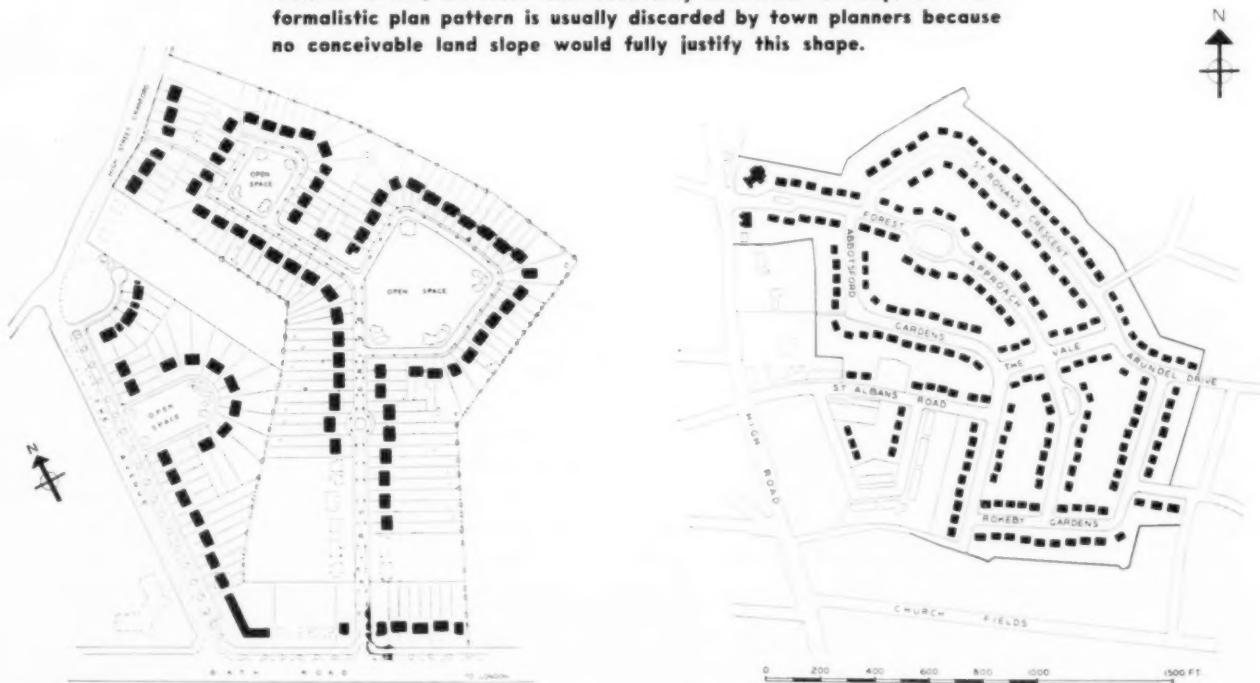
It is within the framework of this plan, as it may be improved from time to time, that private finance and private enterprise are finding an opportunity for large-scale operations, organization of large-scale companies, a prospect for continuity of operations and reduction of housing costs, which may lead us into a private enterprise program comparable to the British program described by Mr. John W. Laing in the following pages.

PLANS OF DEVELOPMENTS BY JOHN LAING AND SON, LTD., BUILDERS
LONDON, ENGLAND

DESIGNED BY
D. A. ADAM, L.R.I.B.A.



EDGEWARE ESTATE. This scheme with its series of circles resembles Golders Green, an older and financially successful development. This formalistic plan pattern is usually discarded by town planners because no conceivable land slope would fully justify this shape.



GRANFORD ESTATE. For this estate the Laing architects prepared several layouts and found it meant either a very dense development or an open one as shown. This open development resulted in such an attractive scheme that the extra expenditure for roadways and land was considered fully justified.

WOODFORD ESTATE. The uneven site influenced the location of roadways. In preparing the layout the management formed a road through the lowest vale and had external roads skirting the estate. This method of forming an external road was found to be most economical for land usage.

Housing Methods in Great Britain

By JOHN W. LAING

MR. LAING is England's outstanding builder. In addition to five large airdromes and a six-million dollar hospital project, his company has in process ten "housing estates", totalling 9,000 houses, to be sold at very low prices on easy terms. The English worker earning as little as \$20 per week can purchase a house by payment of one-quarter of his income or \$5.00 per week.

SINCE THE WAR, we have built in Great Britain about 3,000,000 houses, of which 2,000,000 were by private enterprise and 1,000,000 subsidized by the government and municipalities, who usually employ building contractors to construct the houses for them. The houses by private enterprise are generally sold for owner occupancy, while the subsidized houses are let at a weekly rent.

If we were beginning our housing program over again, we could avoid some of the errors which have been made.

1. At the beginning, our subsidized houses were built too expensively and about half the national subsidy was caused through the first 200,000 houses built. Since then, however, the architects, builders, and workers have co-operated more closely. The architects design economical, healthful houses, builders have adapted their businesses for housing, and the workers, through continuity of employment, have become more efficient. Thus, houses are now being produced economically.

2. With regard to houses by private enterprise, it is realized now that these could have been improved; if there had been closer collaboration between architects and builders the houses built would have had simple beauty.

3. Every care should be taken to insure that private enterprise provides good quality homes.

4. If we had known at the beginning as much as we know now, the builders and representatives of the government would no doubt have met. The builders could then have stated what was the cheapest house that private enterprise could provide.

A worker's family cannot afford to pay more than a quarter of its income for a house. In Britain, private enterprise can provide a good home for \$4 a week in the provinces, and \$5 in London. Probably in America, \$6 weekly would

be your most economical figure. Thus, it should be realized that private enterprise can cater to all classes having an income of \$24 or more per week, while families with incomes below that would need to live in subsidized houses. The importance of determining this line is that uncertainty as to what property will be subsidized hinders enterprise.

The average rent in Britain for a four-room subsidized house, consisting of a living room and three bedrooms, plus a working kitchen, a bathroom, and a good garden, is \$3 per week in the provinces and \$4 in London. This can now be provided by the municipality without a subsidy, owing to increased efficiency and lower interest for loans; and so, for people who can pay the standard rate, subsidies have been withdrawn. But the municipalities are now catering principally to the very poor who have been displaced from the slums; for these, where it is an absolute necessity, they have a reduced rent system.

Thus, in Carlisle, my native town, the rent is reduced where necessary to one-fifth of the family's income, less 12 cents per week for each child of school age, with a minimum rent of \$1.25 per week. So, an old couple with an income of \$6 a week gets a small but healthful home for \$1.25.

Private Enterprise Can Provide 85%

IF BUILDERS of repute and capital would undertake private-enterprise housing on a large and efficient scale, I believe it would be found that they could cater to 85% of the small house group, leaving only 15% to be dealt with by subsidy.

We do strongly recommend that, as far as possible, workers' homes should be in the form of houses, rather than apartments or tenements, and that the latter should be adopted only where it is absolutely necessary that the worker be housed very near to his work, in the center of a large town. Beautiful homes and gardens cost only two-thirds as much as tenement homes,



"FILEY" — Sale price, \$5,916 *



"MALVERN" — Sale price, \$5,475



FIRST FLOOR



SECOND FLOOR



FIRST FLOOR



SECOND FLOOR

and the man who is housed in the tenement is not nearly such a good national asset as the man with a separate home and garden.

Some good builders consider that housing is beneath their dignity; but I submit this is not the correct attitude. The firm with experience, capital, and character may honorably do this work; they can buy in bulk both land and materials, employ reliable, skilled workmen, giving them continuity of employment, and be satisfied with a reasonable profit, thus producing good houses almost as cheaply as the poorer builder does bad ones.

Selling Prices in Britain

THE SELLING PRICE of houses in Britain by private enterprise usually is between \$2,500 and \$5,000, and the cost of municipal houses, including land and roads, is \$2,000.

The lowest selling price of my firm's smallest semi-detached house in London is \$3,000. The purchaser in this case pays \$200, after which his weekly expenses for interest, repayment of capital over 20 years, and rates are \$5.

A similar house in a small provincial town costs \$2,500 and the weekly expenses amount

*Sale price of all houses illustrated in this article includes cost of house, land, roads, sewers, financing.

to \$4. This compares with the rent of a less attractive municipal house in London, about \$4, and, in a small provincial town, about \$3. Thus, it does not cost much more to buy a private house than to rent a municipal one.

Home-Financing

LET US NOW consider some details of building by private enterprise. In the first place, there is the provision of finance for the purchaser. This is usually done by a building society, though sometimes by insurance companies, private trusts, and municipalities.

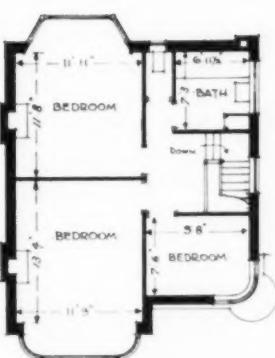
The building societies perform a great national service. At the present time they have out on mortgage 3 billion dollars. They pay 3½% tax-free interest to shareholders, 2½% to depositors—the average they pay for money being 3¼%—and they charge 4½%. Thus, their margin to cover income tax, all expenses and reserves, is 1¼%, which I consider is not excessive. In a normal case, they loan 80% of the cost of the house, but for two-thirds of the houses sold they loan from 90% to 95% of the cost—the difference between the normal loan of 80% and the actual being guaranteed by the builder. This guarantee is usually supplemented



"OLYMPIA" — Sale price, \$5,325



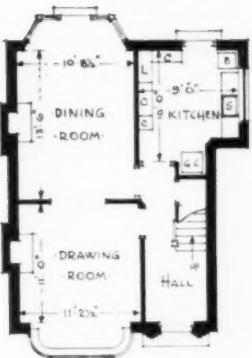
FIRST FLOOR



SECOND FLOOR



"ABERDEEN JUBILEE" — Sale price, \$5,050



FIRST FLOOR



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by a cash deposit, the amount of which depends on the financial standing of the builder.

The other system of finance is that by municipalities. This, I think, has great possibilities where the need is not satisfactorily met by building societies. The government borrows money and lends it to the municipality at 3 1/8%; then the municipality lends it to the purchaser at 3 1/8%. The amount of the loan is 90% of the value of the house.

Finance required during construction depends on several conditions. One is whether the builder develops large or small areas. Some prefer estates of about 300 houses, which can be completed in about a year, after which they move on to other districts. This tends to prevent the builder's being called upon to attend to many small maintenance complaints. Others prefer to purchase large estates which take 5 to 10 years to develop. This has the disadvantage, from the builder's standpoint, that the slightest defect is reported to him and has to be made good at his expense, even if it becomes apparent several years after the sale of the house. Also, the purchase of large areas means heavy capital outlay. On the other hand, there is the advantage of being able to buy land cheaply. Further, it has the great advantage that gradually good will is

created in the estate. Each purchaser recommends friends and thus, selling costs are considerably reduced.

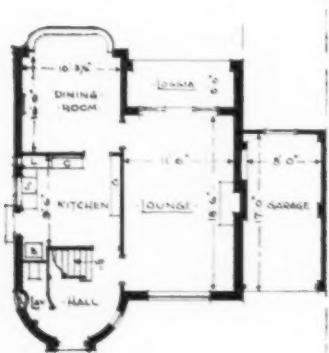
Another condition affecting capital outlay is speed in selling. A business with 10 small estates selling actively a total of 4,000 houses a year could manage on a capital of 2 million dollars. A business with 10 large estates selling slowly about 1,000 houses each year would require the same capital.

Land-Planning and House Design

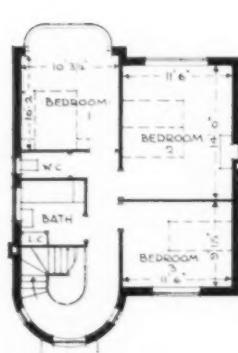
FOLLOWING FINANCE, our next consideration is the subject of land purchase. Wise land purchase is essential to success, and the following points should be borne in mind. The class being catered for; their income and where they are employed; the means of access to and from the place of employment. Don't be tempted to buy land because it is priced at a low figure, and don't be led away too much because it is beautiful. Alas! with your best efforts you will—I won't say, spoil—but change, that beauty. Endeavor to provide beauty of another sort. The essential is convenience for business, and then, the advantages are shops, schools, entertainments, places of worship, and attractive surroundings.



"CORONATION" — Sale price, \$5,475 *



FIRST FLOOR



SECOND FLOOR



"CHALET" — Sale price, \$5,075



FIRST FLOOR

SECOND FLOOR

I happen to be a very average individual and when my firm has a scheme put before it, I consider whether, if I had the income and employment of the man we are seeking to cater for, I would elect to live in that district and in that house. If the answer is in the negative, then we don't touch the scheme. This simple rule has caused us to refuse many a proposal but, on the other hand, the result has been that we have never made any serious blunder.

The layout of an estate is the next matter for consideration. Be willing to spend an extra \$100 on each house for an attractive and well-planned layout. We endeavor so to plan that the majority of the roads run north and south. Thus, the houses face east and west and all rooms and gardens get the maximum of sunshine. Provide open spaces, public gardens, and bush-planted or grass margins to the roads. Construct your roads before starting to build, in order that your materials may be delivered with ease and the purchaser may have clean, unhampered access to his house. Pleasant access during construction is a great help to sales. In the original layout, reserve sites for all public

purposes, such as schools, churches, public halls, shops, and places of entertainment.

In the design of a house, utility is essential. Clothe utility as far as possible with beauty. My firm has been successful in using rustic bricks or stone for walls; rustic, hand-made tiles for roofs and simplicity of architecture. Every room must be of good shape and convenient in its relation to other rooms. They should be well lighted and sunny—the area of glass being about one-fifth the area of floors,—and the windows should be so arranged that anyone sitting in a room can view the garden.

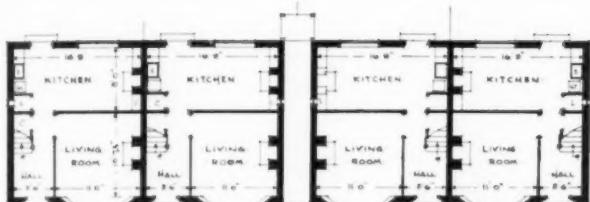
In the case of the cheapest class of house, we build 10 or 12 houses to each acre of land. This density applies to about 75% of the number of houses built. The remainder are usually of a density of 8 houses per acre.

Selling is a very important part of the business of house building. The cost of this varies considerably and is dependent upon the position of the estate and the demand for houses. When the demand was very good and the estate in a popular district, our total selling costs were sometimes only \$10 per house. Now our average selling cost is 2 1/2% of the price of the house. But this average varies between 1% on

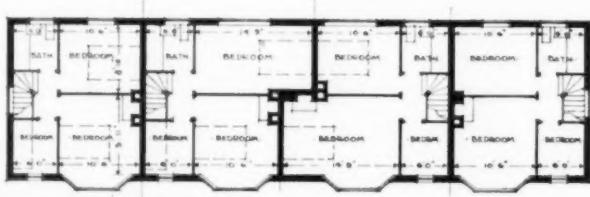
*Sale price of all houses illustrated in this article includes cost of house, land, roads, sewers, financing.



"ELSDALE" —Sale price, \$3,050



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the latter part of a popular estate and 5% in the early days of a difficult one.

Who Should Build for Low-Income Families?

I DO WISH I could adequately express to American builders, so that they might also become enthused, the pleasure experienced in the development of estates and the building of houses for owner occupancy. To conceive and then carry through such schemes, with the assistance of architects and professional men, and afterward to have the pleasure of visiting these developments from time to time, in company with one's sons, and see hundreds of contented people in the full enjoyment of homes and gardens, makes a man feel that something worthwhile has been achieved. Many a man would pay a large sum to get such a thrill; but, in this case, the house owners pay *you* for it. It provides you with a great adventure and the best of fun, and yet people pay you for this happy experience, and in addition thank you for what you have done.

I do wish to say about house-building what the Church of England Prayer Book says about Marriage: "It is not to be taken in hand un-

advisedly, lightly, or wantonly . . . but reverently, discreetly, and advisedly."

There are three classes who should not be allowed to touch this work:

(a) The "get-rich-quick" type of man who calls himself a "financier", but who jumps into a business for a few years, grabs what he can, and then clears out with his ill-gotten gains.

(b) Nor the "well-meaning individual" who thinks anyone can build houses. Building is a most highly skilled technical calling, requiring years of training and experience. The profits, expressed as a percentage of cost, are small, and an unskilled man will either lose money himself or injure the purchaser.

(c) Nor do we want the "impractical idealist" who will build freakish homes. These also leave a trail of dissatisfaction which is a national loss, whereas satisfied house owners are a national asset.

I know of only two classes that can be trusted with the responsibility of building homes for the people. Naturally, I put first the good building firm or builder who has made building a life work.

But should these not be available, then I advise that companies be formed which would have as their directors well-known successful business men of repute, who would undertake directorship primarily as a service to their fellowmen and nation. Such directors would employ good men as managers and would protect the company from the three foregoing types.

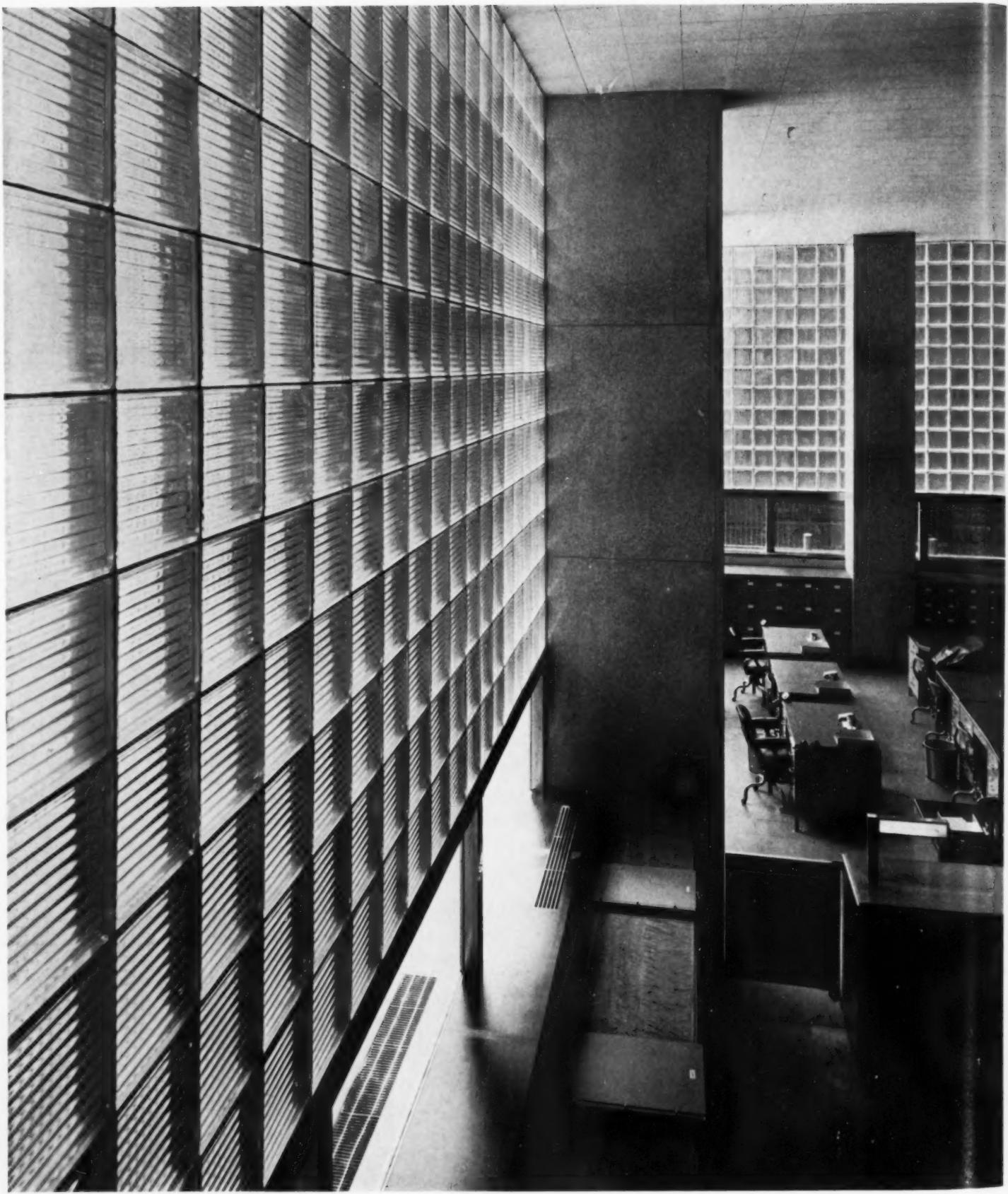
How Can the Government Help?

I CONSIDER that the Government can help in two ways:

(a) Let land be purchased, by negotiation or compulsion, in large areas, at the cheapest price, and be sold to builders at cost, for the erection of suitable houses. Competition will insure, in time, that the benefit of this goes to the purchasers. If it were found, however, that the position was being exploited by the builders, then precautions would have to be taken.

(b) The Government should make, where necessary, loans to permit of house purchase, at the lowest possible rate of interest.

If people realized the national value of house ownership, and good-class builders or well-formed companies undertook house building on a large scale and, if necessary, the Government assisted in the matter of land and loans, I believe good homes could soon be provided without subsidy for 85% of the people.



Schnall

NEW PUBLICATION OFFICES for The Evening Bulletin, Philadelphia, Pa. George Howe, Architect. The glass wall toward street is not transparent and admits no direct rays of the sun.

Planning

a Daily Newspaper Production Plant

By ARTHUR T. ROBB, Executive Editor, "Editor & Publisher"

GENERAL newspaper architecture depends so much upon specialized engineering requirements that few rules can be universally applied. Few presses can be called standard. Many are built to structural limitations of the building. Occasionally the building must be constructed and space allotted according to press capacity requirements. Presses are the key to newspaper layout, and the architect and engineer should keep closest possible contact with the engineers of the press builder and of all other manufacturers of important machinery. For general guidance, the following ideas have been noted in recent construction in which manufacturing efficiency was the governing consideration:

Location

IF POSSIBLE, the plant should be located not in the central business district but in a lower rental area in the direction of the city's growth. If a rail siding is available for direct delivery to the plant, it is desirable; if not, location should be chosen so that loading dock can be constructed to keep vehicles from blocking main traffic stream and to provide speedy ingress and exit for supply and delivery trucks. Area of plot should provide for not less than 25 years' expansion.

Cubic Volume

COMFORTABLE working space should be provided, with wide passages between machines. Provision should be made for expansion in floors or parts of floors available for temporary rental, or for institutional use. These may include space for photo-engraver and photographer, not on newspaper payroll, but available for newspaper service under rental or other agreement.

Exterior

HISTORY of institution and taste of ownership is controlling, but efficient modern plants are gradually tending toward specialized factory construction. Concrete-steel, brick, and limestone are

favored, with growing use of pre-cast materials, and in exceptional cases, where owner has concept of a monument to his efforts, marble and granite.

Interior

ATTRACTIVE foyer can be utilized for publication office, depending upon paper's established practice. Much space now devoted to counters and clerical facilities for reception of subscriptions and classified advertising is not justified either by promotional value or volume of business done through these facilities.

Arrangement

READY ACCESS of public to offices of principal executives is desirable in many cities, warranting location of space for publisher, advertising manager, business manager, and circulation manager on ground floor. If editorial and composing rooms are on higher floors, editor and managing editor should be located conveniently to the operations they direct. If space permits, straight-line production is facilitated by location of all mechanical departments on one floor, preferably the ground floor. Courts have not been found practical in newspaper layouts, but the necessity for such use of space is obviated by development of artificial lighting and air conditioning for rooms cut off from outside light and air.

Construction Details

1. *Load-bearing walls and partitions*: Vibration-resistant clay.
2. *Non-load bearing partitions*: "Grout-lock" burned clay units.
3. *Wall finishes*: Sound-absorbing plaster in the editorial, composing, telegraph-printer, and pressrooms, and all others where diminution of noises will improve working conditions. Shades

of green are favored for walls of working rooms.

4. *Flooring*: Terrazzo marble chip favored for corridors, lavatories, locker rooms, showers, toilets, etc. Wood-block floors in composing, stereotyping, and mailing rooms. Oak and/or walnut in executive and business offices and editorial rooms, or a plain oak floor to be covered by linoleum. Abrasive steel floors in pressroom and around operations where oil makes slipping a hazard. Abrasive concrete for stairways. Concrete bases for machines are in general use.

5. *Service conduits*: Water, electric, and, if used, gas lines should be laid and outlets carefully spotted for each composing accessory and stereotype machine. Electric and telephone conduits should be available in the editorial rooms and the business and classified departments, provision being made in the latter for addition of telephone positions. Hot-water pipes should be laid into all locker-room lavatories. Handholes, at intervals of 8 or 10 feet, should be provided for access to wire conduits.

6. *Air conditioning*: This presents some problems peculiar to the industry. Standard methods are not practicable in all departments. Exhaust air from photoengraving rooms cannot be carried off through the main ducts, because of poisonous dust and fumes. Spot cooling is employed in stereotype room, owing to necessity of maintaining temperature of metal in pots. No effective method has yet been found of reducing temperature of large boiler rooms to that of other sections of building. Filters should be used in ducts from pressroom to remove and possibly reclaim ink from exhausted air. Air from departments where heat, dust, or fumes are present should not be exhausted into the main system. Wet-bulb and dry-bulb ideal temperatures vary with local climate and with each department's requirements.

7. *Lighting*: Indirect illumination has been favored in recent construction. Pressrooms present the most difficult situation, as lighting must cast a minimum of shadows on and near large machines for safety's sake, and must at the same time provide sufficient illumination for setting and matching colors. Skylights are used wherever possible, supplemented by light coves directly over the presses, alternately directing light upward and downward. Three-hundred watt bulbs have been found most efficient. Composing room requires semi-indirect lighting through diffusion

globes, as well as shaded lights on each machine and over each advertising composition rack and make-up table. Stereotype rooms require overhead indirect lighting. In editorial rooms and business offices, modern practice eliminates desk lamps by provision of sufficient overhead semi-indirect light through diffusion globes. Loading docks and mailing rooms should also be amply illuminated from overhead. Stairways and corridors should be illuminated to diminish shadows.

8. *Machine installations*: Permanently located composing and stereotyping machines are set in concrete bases, projecting from the underlying concrete floor flush with the wood surface. Presses are best set on a foundation separate from that of the building to eliminate transmission of vibration. Most advanced practice now provides individual motors for each press, composing, and stereotype machine, eliminating the shaft drives formerly found in press and composing rooms. Press motors should be mounted above possible flood water line whenever possible, and, if they must be placed in a pit, provision should be made for rapid clearing of any water accumulation. Press control board and motor-generator installations vary too greatly with the size of operation to warrant any comment, except that they should be made easy and safe of access to authorized persons, and not to others. It is well to provide separation for such apparatus by fire doors, operating at not more than 150° F.

9. *Fireproofing*: Standard practice prevails both in construction and provision of sprinkler and standpipe protection.

10. *Storage facilities*: Paper storage should be on the same level as the pressroom with tramways to all presses if volume of work warrants it. Its capacity will vary with the practice of the management, but should be ample to accommodate one month's normal current supply. Even where the rest of the building is not air conditioned, it is advised that paper storage and pressroom be so treated. Ink storage tanks should be guarded against radical temperature changes; this also applies to room for storage of ink drums if tanks are not used. Pipes from tanks and tank pumps to presses should not be laid along outside walls. Drinking water storage, fire-protection tanks, and air conditioning water are, of course, stored in roof tanks, protected against freezing according to the range of climatic possibilities.

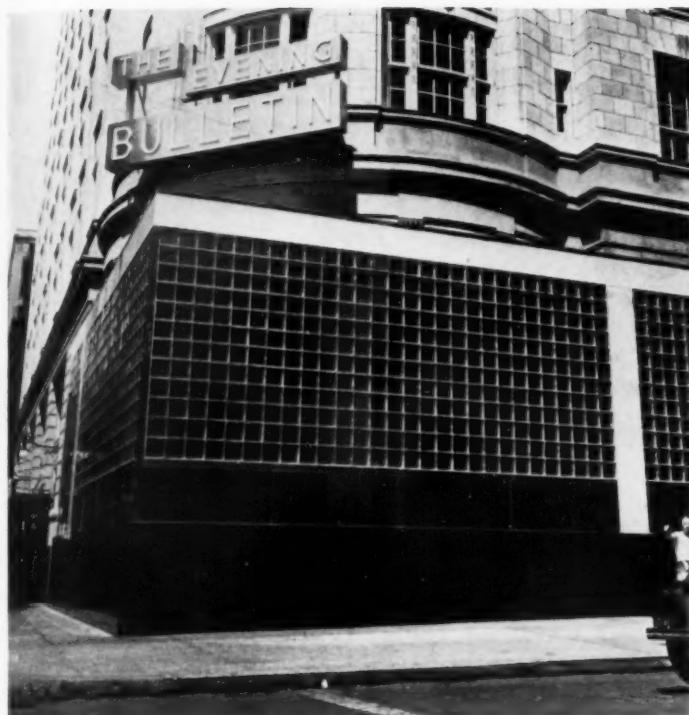
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Photos by Schnall



Planning the Newspaper Office

THE EVENING BULLETIN OFFICE, PHILADELPHIA

GEORGE HOWE, ARCHITECT

"THE EVENING BULLETIN" publication office in Philadelphia in its new form replaces older quarters dating back to 1908. Newest planning methods were applied in the rejuvenation of an outmoded structure. Mechanically, the building has been improved by such conveniences as indirect lighting, air conditioning, and reorganization of office operation.

The main entrance, heretofore at the corner of Juniper and Filbert Streets, was moved eastward on Filbert. Because of this change in the location of entrance, it has been possible to eliminate all steps in the office, or to and from it.

The base of the street facade is black granite. Above is a belt of plate glass and glass blocks extending around the two outer walls. Square columns of gray granite rise to the ceiling which is sound-deadening tile of a soft white. The floor is of blue-veined marble which harmonizes with the gray of the columns.

All the furnishings are of steel, enameled in soft gray trimmed with stainless steel of a dull

finish. The main entrance is entirely of stainless steel, with a revolving door.

Most striking in the modern office are the great world map with time zones, which occupies most of one entire wall, and the weather data and forecast supplied from The Bulletin's own measuring apparatus.

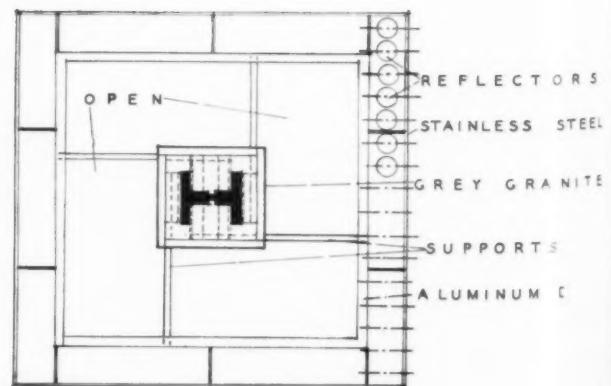
The time-zone map is unique. When reconstruction of the business office was decided upon, some method was sought by which a sense of the daily news events of the world could be impressed upon the public consciousness, with an appreciation of time and distance and the complications and world-wide activities involved in gathering and disseminating news.

Geographic Society Aided

PLANS AND MATERIALS were tried and rejected many times before the right combination was found. The National Geographic Society at Washington was consulted, and its immense store of maps and projections probably



EVENING BULLETIN BUILDING
PHILADELPHIA, PENNSYLVANIA



DETAIL of reflectors shown above



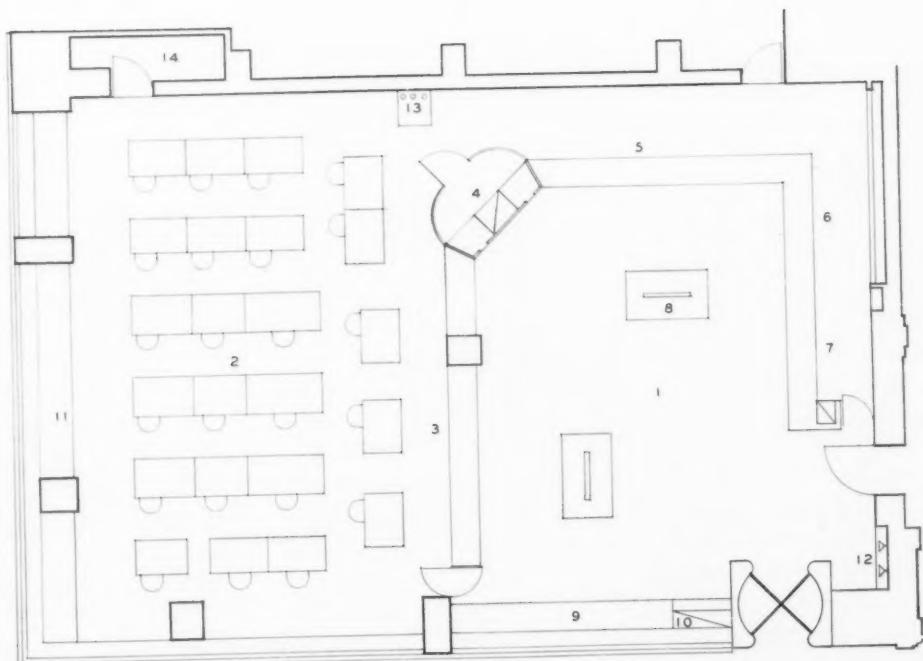
Photos by Schnall

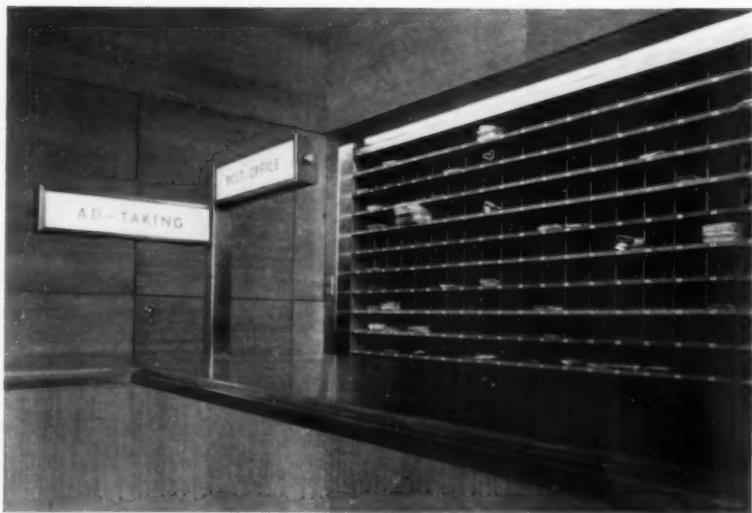
NG
NIA
GEORGE HOWE,
ARCHITECT

PLAN OF OFFICES

1. Public Space
2. Accounting
3. Bill Adjustment
4. Cashier
5. Ad-Taking
6. Mail Boxes
7. Subscriptions—
Back Issues
8. Writing Desks
9. Reading Desks
10. Weather Instruments
11. Files
12. Public Telephones

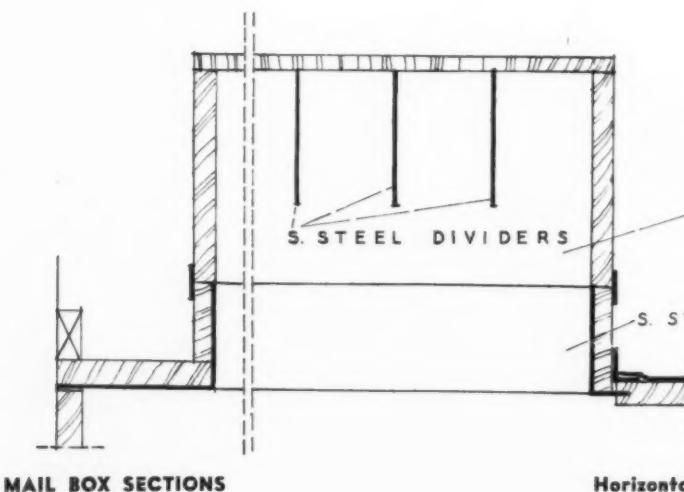
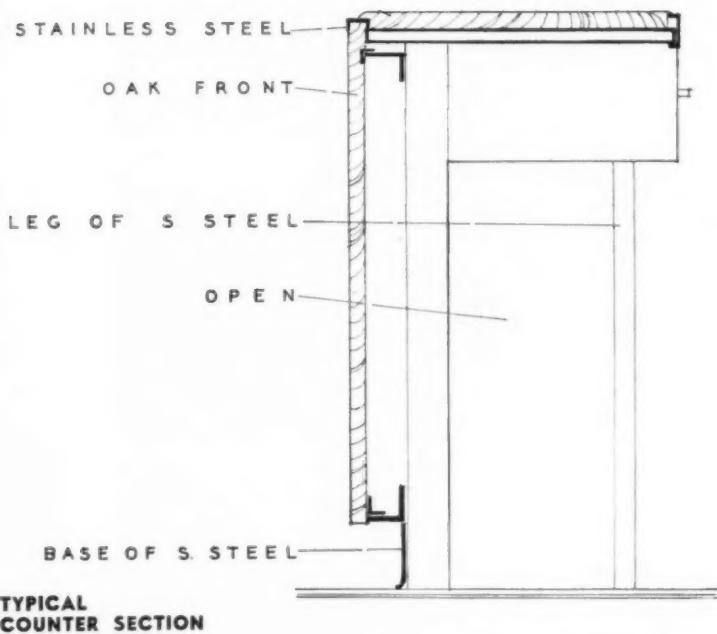
THE GREAT WORLD MAP
with time zones occupies
most of one entire wall. All
furniture is of steel, enameled
in soft gray color and
trimmed with stainless steel.





MAIL BOXES

Schnall



unequaled in this country, was put at the service of the architect, George Howe, and The Bulletin.

A cylindrical, equal-spaced projection of the world was finally adopted. From this there was prepared, especially for The Bulletin's use, a projection which could be used on a parallelogram, with accurate representation of the 24 time zones into which the world is divided. Formica was used for the surface of the map, chiefly because of its permanence and the ease with which it can be kept clean.

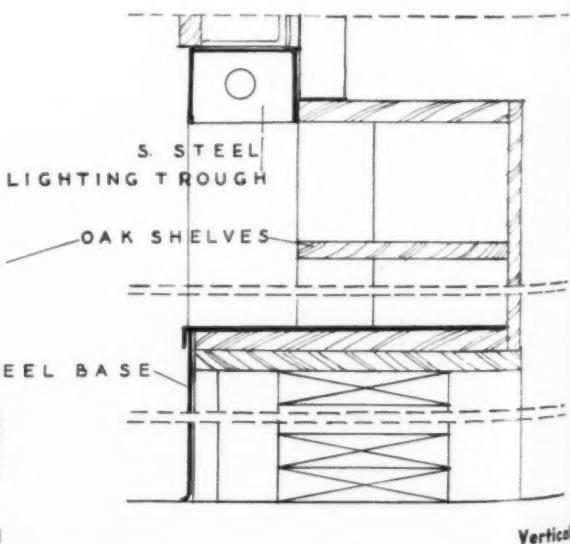
Two large rooms in the rear of The Bulletin building were allotted for shop work, and there were installed the mechanics who made the map and the machines with which they worked.

It was necessary to construct the map in small pieces; the fitting together of these after cutting and mounting looked to the spectator like the assembling in giant-size of any of the jigsaw puzzles so popular a few years ago.

Along the top of the map are 12 electrically operated and synchronized clocks, in alternate time zones, each of which will show the exact time in that zone at whose top it stands. The time in the clockless zone adjoining will be one hour different.

The clock faces are divided by a vertical line. The left side is light, the right side dark, to indicate whether the time is a.m. or p.m. Russia, including Siberia, sprawls over 11 time zones. The clocks show that when it is 12 o'clock noon in Leningrad, it is 11 o'clock that night on Wrangel Island and the eastern coast of Siberia.

The map is mounted along the rear wall of the business office facing Filbert Street and is seen clearly from the street through plate glass windows.



DESIGN
TRENDS

Alongside, but separate from it, will be a large transportation map of Philadelphia. It will measure 8½ x 12½ feet. This map also required innumerable drawings and intensive work, for an attempt was made to combine in it many features heretofore presented only on separate maps. It will show the main transportation routes inside the city and leading out, including motor highways, park areas, waterways, electric power lines, and airways.

Two other features of the room will attract much attention. One is the time-showing device which supplants the customary clock. A frosted glass panel three-feet square near the rear of the east wall conceals a network of Neon tubing which can display any figure. The word "Time" in white Neon letters appears constantly. Alongside it appear figures showing the exact time,

the Neon combination changing once a minute to flash a new figure.

Weather Data Recording

THE OTHER feature, which has been briefly mentioned before, is the system for recording and displaying weather data.

High above the roof of the Liberty Trust Building nearby, The Bulletin has installed the most modern and scientific of automatic weather recording devices on a steel platform. From them cables running down through the trust company building and through underground conduits to The Bulletin office, carry electric impulses recording accurately the temperature, the humidity, the direction and velocity of the wind. The Government Weather Bureau forecasts also are displayed.

Principal Requirements in the Planning of a Newspaper Building

By **WILLIAM GINSBERG**, *Engineer*

THE AUTHOR of this article is a professional engineer, well known as a builder of newspaper plants, including projects for the New York World-Telegram, Washington Daily News, Cincinnati Post, and Pittsburgh Post-Gazette.

IN THE MODERN newspaper plant the necessity for a structure being fireproof, sanitary, efficiently laid out and properly ventilated is universally recognized. Except for the use of different types of equipment and processes, the planning of a newspaper plant, while more subject to specific cases than general rule, is similar in principal to that of most other types of industrial buildings. The usual steps in the manufacture of any product consist of a cycle of (a) receiving, handling, and storing of raw materials; (b) locating the various mechanical departments in correct sequence in the various manufacturing steps; (c) handling and distributing of the finished product; (d) locating the administrative and sales departments for easy access to the factory sections of the building and to the public.

The problem of the storing of paper has al-

ways been a serious one and has been difficult to solve because land ordinarily purchased for the purpose of erecting such a project, while satisfactory for most of the other departments, has always been inadequate for paper storage. The most efficient space for the storage of paper is in the basement at the location of the reel room, where paper is being fed to the presses.

In purchasing land it should be remembered that the basement must be the largest of all the floor areas because of the many utilities required in this location.

It is necessary to plan a building in such a way as to include all these *in addition to storage*: control rooms, ink rooms, paper storage space, air conditioning equipment, boiler rooms and other utilities.

The pressroom should be laid out in such a manner as to make it possible for paper to be

fed easily by means of track to the reels. Sufficient headroom should be given in the pressroom to take care not only of the present height of modern press equipment but of future color printing equipment which usually is constructed over the ordinary presses. Under ordinary conditions, the pressroom height extends from the basement floor to the second floor. With the pressroom located in this manner, the office and factory should be placed adjacent to it throughout the building.

The stereotype department may be located immediately over the pressroom and adjacent to the composing room. It is a good policy to assign space to the editorial department contiguous to the composing room.

An engraving department should be installed which will have easy access not only to the composing room but also to the editorial department.

The first floor is best assigned to trucking space, at which point raw materials are delivered and finished products are removed from the building. The first floor may also house the circulation department and, if large enough, the business and advertising departments.

Many newspaper plants have also, as one of their departments, a radio broadcasting station. By proper methods of isolation this department can be very easily built on the roof with its receiving towers located either at the building or at a remote point. Particular care must be given to eliminate vibration and noise, not only from the radio department, but also from the office section of the building where quiet is necessary. Several successful methods have been used in isolating vibration and noise from the various types of equipment, such as presses, monotype, and metal-cutting saws.

Another important factor in the planning of a newspaper plant is the choice of the site. Several questions of importance arise in making a decision:

1. Is the location satisfactory for the receipt of newsprint and the efficient distribution of newspapers?
2. Is there sufficient frontage to take care of an adequate number of trucks in preparing for distribution and parking?
3. Is the site large enough to take care of ample paper storage space in the basement adjacent to the reel room?
4. Is the site close enough to the center of the town to make it conveniently accessible to the public?

Very frequently it is an advantage to buy a larger site than is necessary, because the basement should be larger than the upper floors in order to prepare for press expansion and still maintain ample area for storage of paper around the reel room where it can be moved to the reels most economically.

In planning the pressroom, its proximity to the point of distribution should be considered. In order to keep the length of newspaper conveying equipment down to a minimum, the presses should be laid out parallel to the street where the trucks are loaded, and the conveyors should be as nearly perpendicular to the presses and mail room as possible. There should be nothing but the mail room between the press line and street or trucking space. Beside the advantage of quick operation, equipment costs are kept down in this way.

While air conditioning is still considered a luxury in many offices, the ventilation of the mechanical portions of the building has been found to be a necessity. The space occupied by paper storage and the pressroom both require an almost constant humidity; this is necessary to prevent the breaking of paper on account of brittleness caused by dryness and the generating of static electricity caused by the rapid revolving of paper reels.

It is also necessary to ventilate the pressroom because of the tendency of ink to fly over the entire area of the pressroom. It has been the writer's experience in preparing his plans and budgets that the humidification of these spaces is as necessary as the installation of the equipment itself.

A study of conveying equipment throughout the various parts of the building with a view toward eliminating a great deal of expensive manual labor as well as the speeding up of the manufacture of the newspaper has been found necessary. The receiving of the paper by means of chutes or paper drops, the handling of the raw newsprint by means of track, transfer tables and dollies, the delivery of the finished plates to the pressroom for installation of the rolls, the delivery of the finished newspaper from the presses to the mail room, and the conveying of the finished bundles of newspapers to the trucks ready for distribution, are all important factors in the efficient operation of the plant.

The foregoing is a mere outline of important factors entering into the design of a newspaper plant which require special study on the part of the engineer or architect, with conditions varying in each newspaper plant designed.

PRESS - CITIZEN BUILDING

IOWA CITY, IOWA

KRUSE & KLEIN, ARCHITECTS



REAR ELEVATION

PLAN Rectangular, regular.

EXTERIOR Brick walls, glass brick panels in place of windows. Terra cotta trim, stone base. Roof: flat, composition. Galvanized copper-bearing steel flashings.

STRUCTURE Concrete foundation walls, spread footings, steel and concrete skeleton and wall-bearing (exterior walls) construction, concrete floors. Poured gypsum roof on steel beams. Columns and beams fireproofed to mezzanine floor level.

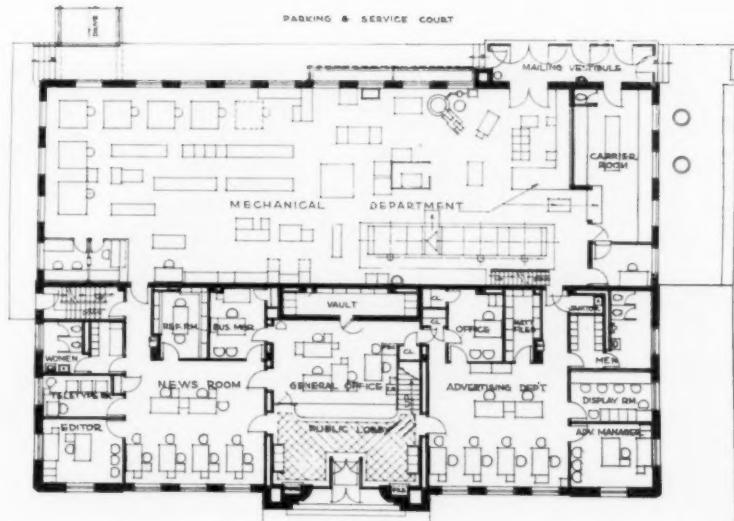
FLOORS Basement, first, and second floors; mezzanine for office and shop.

INTERIOR
Basement Boiler room, fuel room, paper storage, receiving rooms, engraving department, dark rooms and file rooms, reel room for press. Cement floors. Rough walls, no plaster.

First Floor General office, vault and lobby, newsroom, advertising department, private offices, file rooms, locker and toilet rooms, mechanical department and carriers' room, mailing vestibule. General office and lobby have asphalt tile floors, white-coated walls (walnut wainscot in lobby); acoustic cork ceilings, marble base, wood cornice. Private offices have asphalt tile floors, plaster, glazed and glass brick walls, acoustic cork ceilings. File rooms have asphalt tile floors, plaster walls, acoustic cork ceiling. Toilet rooms same with ceramic tile floors (asphalt floors in locker rooms). Mechanical department has wood-block floor; face brick and glass brick walls, lower 7'-6" of walls glazed brick, exposed structural steel ceiling. Carriers' room same, excepting cement floor, ornamental aluminum satin finish.

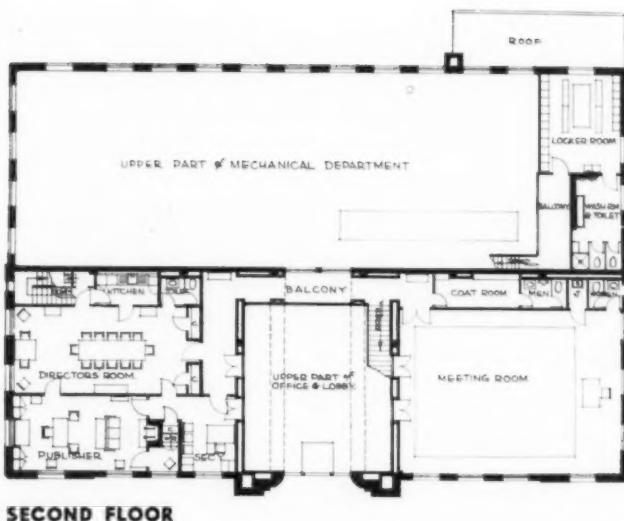


BASEMENT FLOOR



FIRST FLOOR

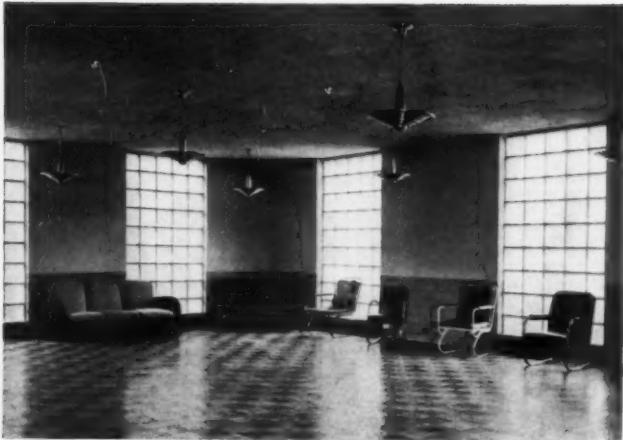
PRESS - CITIZEN BUILDING
IOWA CITY, IOWA



SECOND FLOOR



MECHANICAL DEPARTMENT



MEETING ROOM, SECOND FLOOR

Second Floor Contains upper part of general office and lobby, upper part of mechanical department, locker rooms and toilets, small kitchen, directors' room, publisher's office, and meeting room. Offices on second floor have cement floors carpeted. Publisher's office matched veneer mahogany walls, acoustic cork ceiling. Director's room: walnut dado and trim, wall paper, acoustic ceiling. Kitchen, stainless steel equipment; walls, Carrara glass; ceramic tile floor. Toilet room similar.

EQUIPMENT

Wood furniture, hangings and carpet in directors' room, publisher's office and secretary's office adjoining. All other furniture and equipment, steel. Chairs and settees, aluminum with leather seats.

AIR CON- DITIONING

Building, except garage, completely air conditioned. Central fan system in two units, one for office and one for mechanical department. Heating: Century oil burner in Kewanee boiler, furnishes steam to coils in central conditioning units. Glass wool filters. G-3 humidifiers. Dunham unit heater in garage. Dunham vacuum pump. Cooling, by water and compressor. Private well and pump for water coils, G-3 compressor for freon coils. Galvanized copper-bearing metal trunk line duct system. Barber-Colman dampers, grilles and controls. Separate exhaust system for toilets, engraving department, mechanical department, and meeting room. Control system, completely automatic, summer and winter and cycle change.

PLUMBING

Private well, pump, and pneumatic underground tank for water supply. Circulating fresh well water for drinking fountains. Kohler fixtures. Gas heat for all casting equipment in mechanical department. Cold water and waste piping for cooling water to all casting machines. Air compressor, with air piping to various departments. Coil in heating boiler for year-round domestic hot water. Copper hot-water storage tank. Circulating system for hot water, inside cast-iron downspouts and storm sewer. Soil and vent piping, cast iron. Process waste, duriron. Water piping, copper. Air piping, galvanized steel. Gas piping, black steel. Hot and cold water pipes covered with air cell. All piping painted.

TELEGRAPH - HERALD BUILDING

DUBUQUE, IOWA

KRUSE & KLEIN, ARCHITECTS

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PLAN

Slightly irregular rectangle.

EXTERIOR

Granite base and terra cotta face on two street sides, face brick on alley and rear sides. Terra cotta moderately ornamented. All windows steel, projected type. Two ornamental cast-iron entrances and two cast-iron window spandrels. Roof: flat, composition; copper flashings.

STRUCTURE

Spread footings, concrete foundation walls, concrete skeleton construction, fairly heavy construction throughout. Completely fireproof. All floors concrete. Roof is wood decking built up over concrete future third floor, moderately long spans over lobby. First floor has several different levels. Skylights over composing room.

FLOORS

Basement, first, mezzanine, second; provision for two future floors.

INTERIOR

Basement

Boiler room, mechanical equipment room, garage, paper storage, file vault. Cement floors. Rough walls, no plaster.

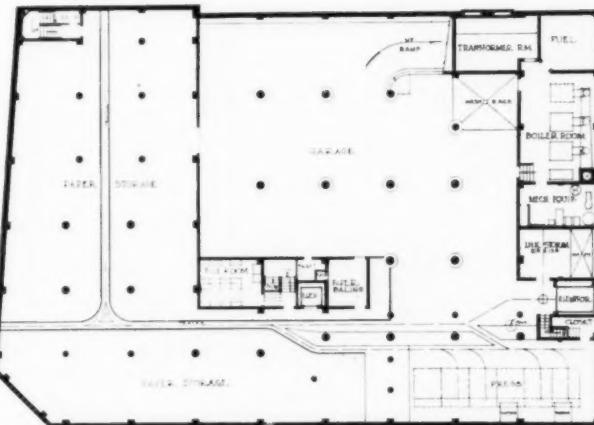
First Floor

Lobby, general office, private offices, toilets, newsroom, composing room, stereotype room, pressroom, mail room, carriers' room, separate entrance and lobby for upper floors. Floors: terrazzo in lobby; offices, linoleum; stereotype, steel plate; other mechanical departments, wood block. Walls: mechanical departments, glazed brick and face brick; no ceiling plaster; other walls and ceilings plastered. Marble wainscot in general office and lobby. Ornamental cast-iron rails around mezzanine.

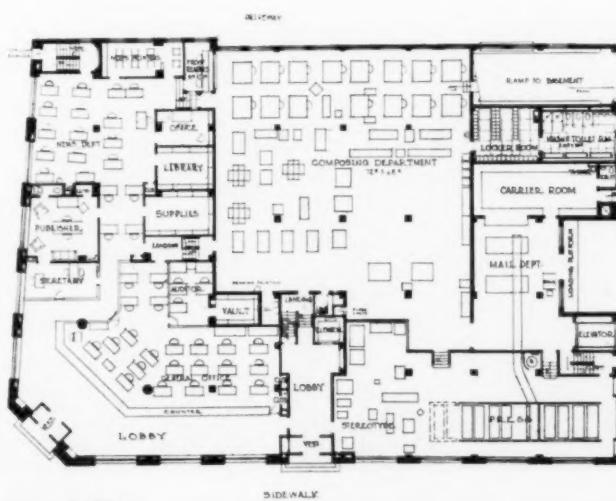
SIGN
END
DESIGN
TRENDS



MAIN ENTRANCE



BASEMENT FLOOR



FIRST FLOOR



MEZZANINE FLOOR



SECOND FLOOR

TELEGRAPH - HERALD BUILDING DUBUQUE, IOWA

Mezzanine

About 25% of total area. Photograph laboratory, radio room, private office toilets. Terrazzo floors, linoleum in offices, all plastered.

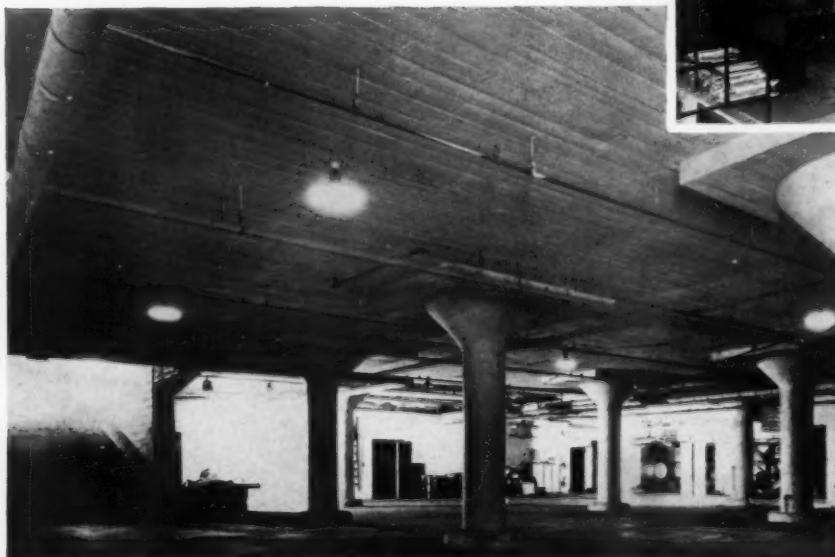
Second Floor About 40% of total area. Rentable area unfinished (about 40% of floor), job printing department, toilets. Toilets: terrazzo floors, all plastered. Job department: wood-block floor, glazed brick and face brick walls, no plaster ceilings.

HEATING

Vacuum system, Johnson Service temperature regulation, cast-iron radiators, two Kewanee boilers, oil burners, no process steam.

PLUMBING

Steam type storage tank water heater, bilge pump, compressed air system, softener and soft-water system for equipment cooling water, considerable gas, water and waste connections to equipment; all concealed water pipe, copper.



BASEMENT GARAGE; (insert) COMPOSING ROOM

DESIGN
TRENDS

Opportunities in City Planning for Architects and Landscape Architects

By CHARLES DOWNING LAY

CHARLES DOWNING LAY, Landscape Architect, has been a frequent collaborator with architects on projects for municipalities and state. He was planner for U. S. Housing Corporation during the great war, worked with Arnold Brunner, Architect, on town planning for Albany, New York, and was landscape architect for parks, subdivisions, and private estates.

EVERY ARCHITECT has a right because of his training and knowledge to think that he should be a leader in his community. There are several reasons why he seldom attains that position, the chief, I think, being a reluctance to advertise and sell his capacities.

Site planning or any form of city planning seems to me a good opening for advertising first and selling afterwards. There are few places where expansion is taking a normal course without some plans for future schools, town halls, or other public buildings; for monuments, parks, street extensions, or revisions. These should be studied with care and every means should be taken to protest against planning which is ill-considered, or stupid, or venal.

It is interesting to study possibilities in any town and not too much work is involved in preparing plans for building sites, for street revisions, or for park locations. Besides, this is an effective way of showing what the architect's thinking can do as well as being helpful in obtaining public support.

Architect and School Locations

THERE IS no one in the community better equipped than the architect to make a preliminary study of school locations, and to write a program for the entire development of site and building. He should offer his services for a fixed fee to make such a report on available sites, with assessed values and a presentation of arguments for and against each site. A strong

recommendation for one site, if it can be made without the appearance of ulterior motive, will usually add to the value of the report.

This work will lead into the byways of politics and may arouse the antagonism of those who do and of those who do not want to sell or to have a school nearby. I believe that if the report is honest and based solely on grounds of economy, efficiency and public benefit, the architect will come out ahead and his position be strengthened.

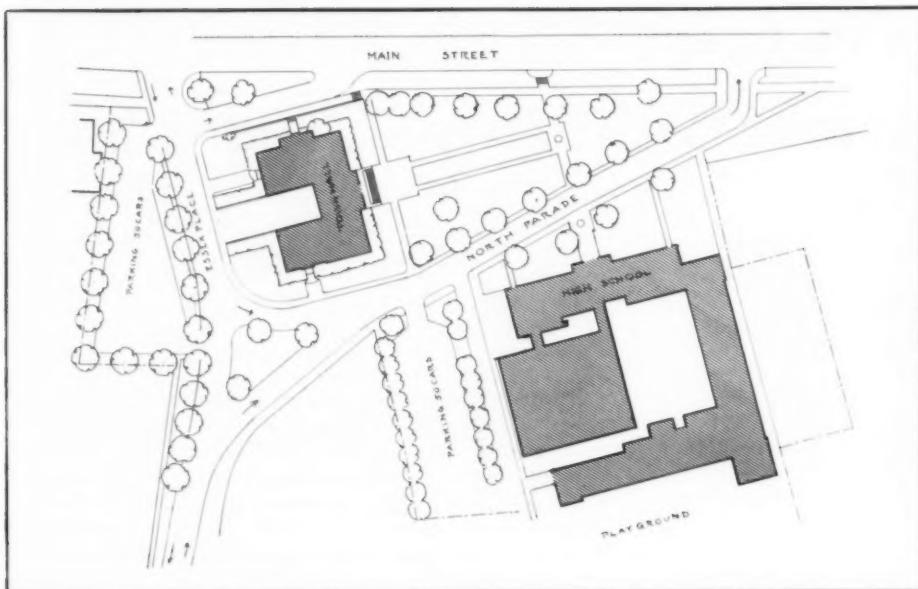
In making a report of this kind the architect should remember that any building on almost any site is likely to be outmoded in thirty years or so and should scarcely be planned for longer use.

Popular acceptance of this type of report will put the architect in a favorable position. Its rejection might in the end add to his prestige, since he is likely to find among his friends and to bring to his side many staunch and understanding supporters.

It will be no trouble for him to absorb the practical motives which influence the superintendent and the school board in selecting a school site, and comparatively easy to make them see the necessity for a site which will be large enough, and a handsome setting for a building which will be an ornament to the town as well as an efficient plant for the education of the young.

Architect as Town Planner

THERE ARE many chances for the architect to study street traffic, especially the diversion of



ARRANGEMENT OF SURROUNDINGS for new Town Hall of Stratford, Conn. Charles Downing Lay, Landscape Architect; Wellington Walker, Architectural Collaborator. A restricted site required rearrangement of streets and development of parking areas for both school and town hall.

through traffic from the center to a trunk line bypass. In this he should try to secure a common-sense and agreeable solution of a difficult problem. This may have to be volunteer work, but if he avoids the dangers of being too idealistic, and of making a plan too grand for the public to swallow or to pay for, acceptance should be likely.

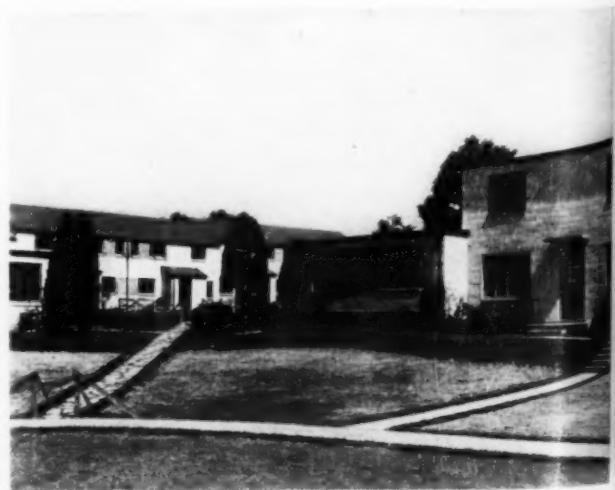
It is a fatal mistake to be too "rationalistic" in these studies; this must be avoided even if the plan proposed seems commonplace and uninspired, though it must not be mean or inadequate.

City planning of any kind is not always permanent in growing cities. No one who has seen the change in transportation in the past twenty-five years is likely to stake much on the improbability of future changes. City planning is in many cases a day-by-day affair done by skillful engineers under the direction of good executives unaccustomed to thinking about such problems. Town officials and engineers welcome help from architects, being always eager to do better work than they are as a rule permitted to do. They will adopt and work for a superior plan if it is suggested to them without publicity.

City plan commissions have become almost universal as the result of the work of a few disinterested men. They have accomplished great good in establishing security and value, but they often lag behind our needs because their membership is amateur. They should, in every case, have a professional adviser at any salary that can be appropriated from one dollar a year up. Every question before them should be the sub-

ject of a written report by the adviser. Their action upon the case will then not be made because of ignorance or lack of understanding.

I think it is a bad policy for an architect to accept an appointment to a city plan commission. He should keep his professional attitude, be the intelligent judge, and let the commission, as a jury, decide as it will. In an advisory position he would be valuable to the town because of



GROUPING OF ROW HOUSES with unified landscaping made possible by large-scale planning and the combined efforts of architect and landscape architect. Greenbelt, Maryland. Hale Walker, Town Planner; Douglas D. Ellington and R. J. Wadsworth, Architects; H. B. Bursley, Engineering Designer; Wallace Richards, Coordinator.

DESIGN
TRENDS

his foresight, his understanding of the problems, and his determination to seek always for some happy solution, whether in relation to an applicant for a garage permit, or with a real estate developer eager to sell lots, or with the town officials, proposing some street revision or extension.

Town Plans Changed Daily

THERE WILL not be many occasions, except in the larger cities, when a master plan of great detail can be made, because the expense of such work is too great; but there should be some kind of plan on which the proposals can be sketched and their implications demonstrated. It is as futile to plan too far ahead as it is dangerous and costly not to plan ahead at all. The mean must be sought daily, and daily changed.

A byproduct of these preliminary studies may be the education of the architect himself, which is a benefit to the community not to be valued lightly. Architects seem as a rule to be too easily satisfied with the sites provided for important buildings and not always intelligent about selecting them. They should learn more about site planning in Schools of Architecture and they should try to learn faster when they have been graduated into the profession. City planning is of fundamental interest to every architect, for it is only by putting a useful and beautiful building on a wholly suitable site that owner and pub-

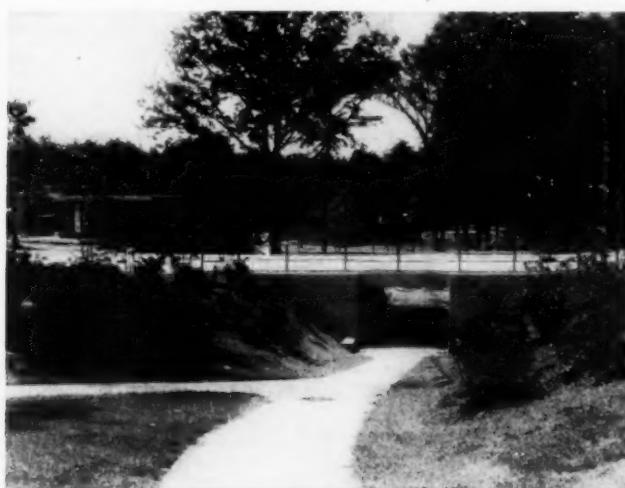
lic alike can get full benefit from his services as a designer.

Site Planning

NEW YORK CITY (Manhattan) offers few good sites for buildings. Other cities are better in this, but one can go through city after city and find churches, libraries, post offices and other public buildings, handsome in themselves, losing much in value and beauty because of the way they are placed on the site or because the site itself was not sufficient in size, suitable in locality or in importance, for the building.

Site planning and city planning are the same when it comes to a public building. Easy access by foot and by motor and more than ample parking space off the crowded highways for employees and visitors are essential, no matter what the use of the building may be. Distance from the main routes or centers is not so important as convenience around the building itself. Parking must be provided from the beginning. A site where the parking area can not be enlarged for future needs is not a good site, no matter what the other advantages may be.

If the young architect will participate in public affairs, holding aloof from party politics if possible, there is a good chance that he will become a prophet in his own country and some day find himself doing a large proportion of public work in addition to private building.



Rothstein

Resettlement Administration Photos

TO PROTECT PEDESTRIANS underpasses have been constructed wherever a footpath crosses a busy street. There is no traffic danger for children in going between Greenbelt home and Greenbelt school. Landscaping of banks and preservation of woods become a part of the architectural and landscape procedure.



THE LANDSCAPING OF HOUSES is improved by collaborative design of a community. Greenbelt, Maryland. The inclination to preserve topography and native trees is greater where architect, engineer, and landscape architect work as a team. These features then determine the roadways and housing sites.



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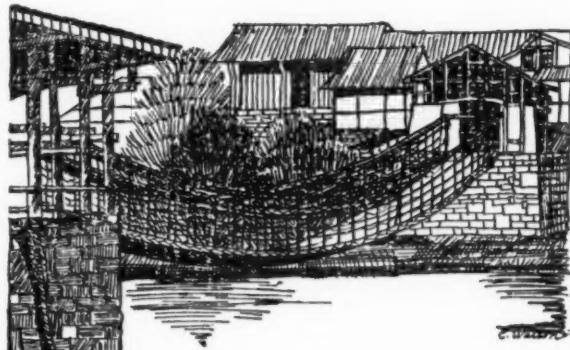
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(SEE ADVERTISEMENT ON OPPOSITE PAGE)

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Reviews of New Books



*Primitive Suspension Bridge at Sze-chuan
The suspension bridge has been used by many peoples, in various parts of the world, from the earliest times.*

BRIDGES IN HISTORY AND LEGEND. By Wilbur J. Watson and Sara Ruth Watson. J. H. Jansen, Cleveland, Ohio, 1937. Price \$3.50.

This book is intended to show the significance of the bridge in civilization. It is not in any way a treatise on the art or science of bridge building. Bridges that by reference have found their way into literature or historical account are described here.

One chapter, "From Rainbow Bridge to the Golden Gate", is necessarily brief because new bridges are too spic and span to have acquired the moss of literary allusion.



The Baltimore Truss, as used in early American iron bridges.

The chapter on "The Span of a Century" considers the suspension bridge. John A. Roebling was not, of course, the first to use this scientific principle of construction. Thomas Telford built the first suspension bridge across Menai Straits in Wales in 1826 with a central span of 580 feet. This bridge remains in satisfactory service. In 1847 Colonel Charles Ellet started construction of the 1,010-foot suspension bridge which was to carry the Old National Road across the Ohio River at Wheeling, West Virginia. The original bridge of Colonel Ellet turned turtle during a severe windstorm and was finally rebuilt under the direction of John A. Roebling in 1862. The Niagara Suspension Bridge, with a span of 825 feet, was completed by Roebling in 1854. The Brooklyn Bridge, also by Roebling, followed in 1883, comprising a main span of 1,596 feet in length. Galvanized drawn steel wire, made in a specially-built factory erected in New Jersey by Roebling, was used in this bridge for the first time. Previously all wire had been of charcoal iron.

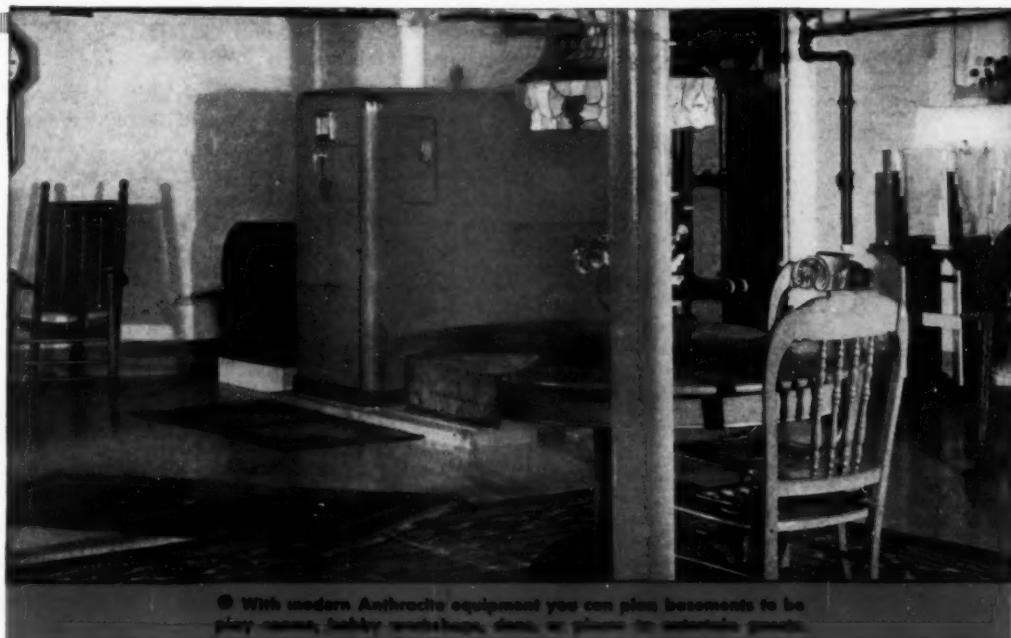
THE AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS GUIDE, 1937, for heating, ventilating and air conditioning. Published by A.S.H.V.E., New York. Price \$5.

The new 1937 edition of the A.S.H.V.E. Guide is accepted by engineers and architects as the authentic source of information on heating and ventilating. The 44 chap-

(Continued on page 90)

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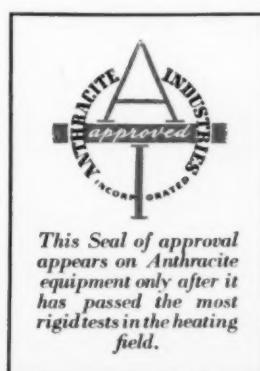
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Reviews of New Books

(Continued from page 88)

ters comprise 808 pages of technical data and 316 pages on equipment.

Some new features are these: a new chapter has been written on the Physical and Physiological Principles of Air Conditioning; a new chapter on Automatic Control; the new chapter on Sound Control presents the subject material in a manner suitable for heating and air conditioning engineers; the chapter on Air Distribution has been completely rewritten; other chapters have been revised and amplified with new material.

CREATIVE DESIGN IN FURNITURE. By William Varnum. Manual Arts Press, Peoria, Ill. Price \$2.50.

A popular book on furniture design treated almost entirely from the point of view of "looks" as a determinant of form. The book is loaded with such terms as: enrichment by accented contours, lightness through perforation, symmetrical balance, significant lines. This is to be regretted, particularly since furniture is so much in need of improvement.

MEDIEVAL STYLES OF THE ENGLISH PARISH CHURCH. By F. E. Howard. Charles Scribner's Sons, N. Y. Price \$5.

This book on medieval church building is intended for the church historian and antiquarian. Unlike most books dealing with churches, this one exalts the discovery of little-known churches of lesser size as the achievement of England in another age. The churches illustrated and discussed belong to another age and are identified with the social life and history of the British Isles during the activity of Gothic construction. It is for the architect to read and to go do likewise not in the form but in the spirit.

AIR CONDITIONING THE HOME. By Elmer Torok. Industrial Press, N. Y. 1937.

This is one of several new books on air conditioning. It is written by Elmer Torok, a mechanical engineer and member of the American Society of Heating and Ventilating Engineers, and issued by the publishers of *Heating & Ventilating*.

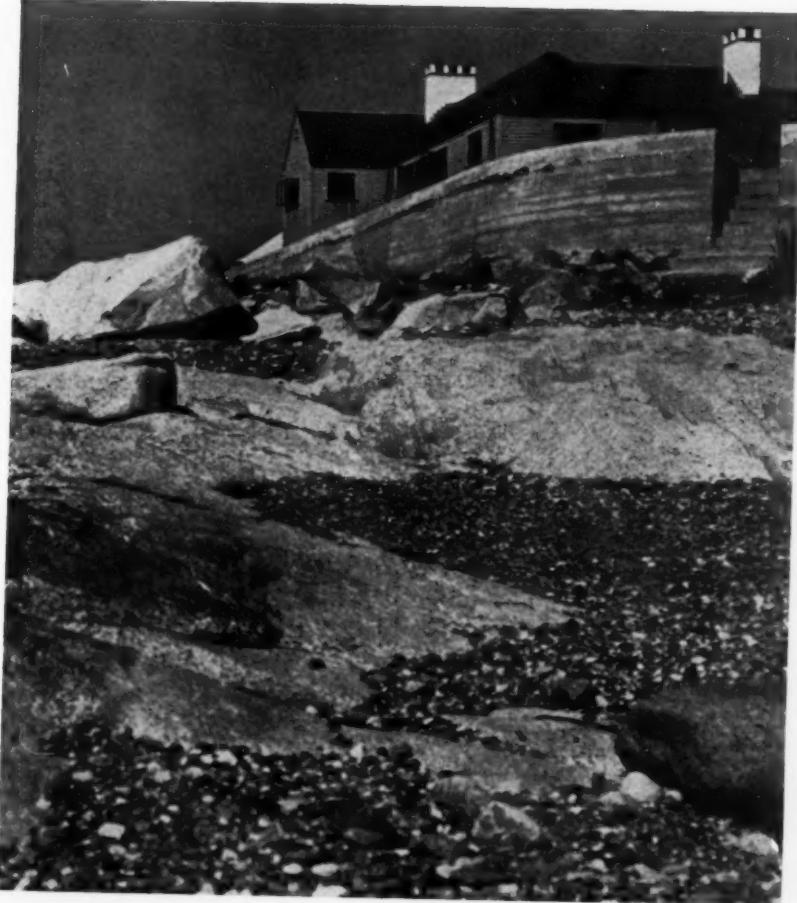
The book describes what air conditioning includes, more specifically what it does for the home, its advantages, the fundamental principles of design, the installation and operation of air conditioning systems, specific examples of heating and cooling calculations, designing data, and general information of importance both to engineers and home owners.

The book is published primarily to supply engineers, architects, and home owners with useful information and data.

NEW CHURCHES ILLUSTRATED. Incorporated Church Building Society, London. Price \$1.50.

Photographs, ground plans and information regarding fifty-two representative, but architecturally unimpressive, churches erected in England during the years 1926-1936.

BUILDING TYPES



HOUSES - \$20,000 AND OVER

ARCHITECTURE

Record

Houses Costing \$20,000 and Over

BACK in 1928 some 7,000 houses costing \$20,000 or more were constructed in the area east of the Rocky Mountains. The depression cut this total by more than 90 percent with the result that from 1933 fewer than 650 such houses were constructed. Since then there has been a consistent recovery; for 1936 the total was almost three times as great as for 1933. And current figures warrant the conclusion that for 1937 an increase over 1936 of no less than 30 percent will be recorded.

But with all of this recovery, 1937 must end with a total approximating only the volume for 1931; very probably the 1937 figure will be less than 40 percent of the 1928 figure. In total dollars of expenditure something of the same story is told—a figure for 1928 approximating \$235,000,000 for houses in the high-cost bracket of \$20,000 and more; a low figure for 1933 of less than \$25,000,000; and a total for 1937 which will probably not exceed \$80,000,000.

Since the depression low points each of the 13 major geographic areas east of the Rocky Mountains participated in the recovery movement, but in varying degrees. For the New England; Upstate New York; Central Northwest (the Dakotas, Northern Michigan, Minnesota, and Northwest Wisconsin); and the New Orleans (Louisiana and Mississippi) territories, the year 1934 marked the nadir of depression so far as this class of housing is concerned. The remaining nine districts hit the lows in 1933, with the exception of the Southeast,

which was at its lowest in 1932.

From its low point the Pittsburgh district (Western Pennsylvania, Ohio, Kentucky, West Virginia) more than trebled in 1936 its 1933 total of houses erected costing \$20,000 and more; for this area the total for the first nine months of 1937 exceeds the full year's total for 1936. Much of this striking gain is traceable to improved industrial conditions in the area. In Southern Michigan the gain between 1933 and 1936 was even more striking with the total for the latter year more than 6 times that of the former and the nine-month volume for 1937 at the level for all of last year.

For New England, on the other hand, far less important percentage gains were recorded. From the 1934 low to 1936 the volume little more than doubled with indications that the current year's total may almost triple the 1934 figure. For the Middle Atlantic States (Eastern Pennsylvania, Southern New Jersey, Delaware, Maryland, the District of Columbia, and Virginia) fairly similar gains occurred both for 1936 and 1937.

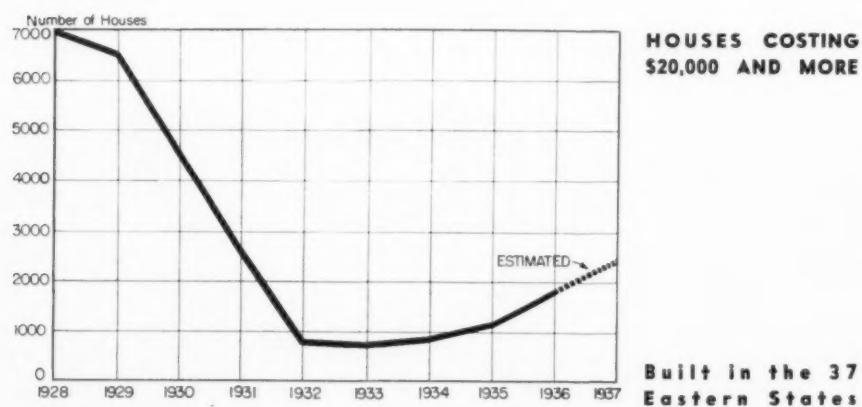
In the Chicago area (Northern Illinois, Indiana, Iowa, Southeast Wisconsin) the 1936 total was almost four times the volume reported for 1933, while indications point to a 1937 figure of about five times that for the depression year. In the Southeastern area of the country (the Carolinas, Georgia, Florida, Alabama, and Eastern Tennessee) the 1936 total was more than four times the 1932 figure with 1937.

Analysis

THE PLANNING of the more expensive residences ordinarily directs attention to many elements either unimportant or entirely lacking in homes of smaller investment. Two examples here are the service facilities and the site development. Whereas the more modest home is operated efficiently and satisfactorily with two or one, or no servants at all, the larger residence cannot be; the habits and desires of the owners, the greater number and larger dimensions of rooms, the division of labor and responsibility, all conspire to make the housing of service facilities a major concern of the designer. The space necessary for the fulfillment of these functions, for the housing of equipment, and for employee maintenance probably averages between thirty and forty percent of the entire space devoted to the project, and in cost represents at least one-third of the total. This study presents a detailed analysis of these elements which comprise so important a part of larger and more expensive residences.

By the same token, homes costing more than \$20,000 invariably include a site planning factor rarely encountered in work of lesser value. Few problems, or for that matter possibilities, are to be discovered where the lot or site represents something in the neighborhood of a quarter-acre or less, but in the case of greater expanse many and varied treatments may be evolved. Because of the increasing importance of this site development, we present a suggestive approach to the subject. Too much attention cannot be given to locating the house with its out-buildings where fullest advantage can be taken of existing conditions. Not only will this result in a saving in planting, grading, etc., but it should result also in lessening the artificiality so often unwittingly introduced, such a hallmark of yesterday, for instance, as cast-iron stags on the lawns.

Many other elements of residences become increasingly important as the consideration of costs becomes secondary. Interiors, decoration, fur-



Built in the 37
Eastern States

nishings require infinite deliberation and detailed study. Installation of mechanical equipment and labor-sav-

ing devices suggest many solutions. Since treatment of all these items is impossible within the limits of this

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A Study of Residential Service Facilities and Accommodations

By OSCAR MULLER, B.Arch.

DESPITE a long-time general trend toward smaller servant staffs, and an increasingly mechanical performance of activities hitherto discharged by servants, owners of large residences and estates, and even of homes costing only slightly more than \$20,000, still require assistance in their living routine from various inclinations as well as from necessity. In any event, life in a more expensive home demands certain fundamental servant operations which must be accommodated. These are broadly as follows: cooking, serving, cleaning, nursing, chauffeuring, and gardening.

The units here illustrated are, for the most part, presented in terms of their constituent parts, functions, and locations in the service unit. In practice, these units may vary according to the size and variety of equipment they are to contain and according to the shape, size, or location of space available in each project.

Kitchen

FOR EFFICIENCY, planning of the kit-

chen (Fig. 1) must preclude all unnecessary traffic through the work areas; service entrance, access to the basement, etc., should be so arranged that traffic not required for storage, preparation, or service, does not go through the kitchen or pantry. Obstruction of work areas by general storage closets and breakfast nooks should be avoided.

The kitchen ought to be organized into an orderly circuit of work centers as follows:

- (1) Food storage, including refrigeration facilities for perishables.
- (2) Food preparation, including sink and mixing equipment.
- (3) Cooking, including range, dish warmer, and storage space for cooking utensils, platters, plates, etc. A vented hood should be provided over range.
- (4) Serving may be separated into two parts: one for hot foods near range, and another for cold salads, beverages, pastries, etc., all of which may be prepared in

the pantry, if the latter contains a sink and refrigerator.

- (5) Cleaning of tableware and utensils may be separated or combined. The pantry sink may be used for tableware; otherwise, the food preparation sink serves as a cleaning center for both.

Tableware such as silver, glass, china, and linens should be stored as near the dining space as possible, usually in the pantry.

Many designers prefer a U-shaped plan for both kitchen and pantry, since it helps to keep traffic at the serving end, thus avoiding unnecessary steps.

Pantry

THE PANTRY (Fig. 2) is an important area in a kitchen unit and should be included, if it is at all possible; not only does it serve as a preparation center for cold foods, desserts, and beverages, and as a cleaning center for tableware, but it also provides noise insulation between kitchen and dining room.

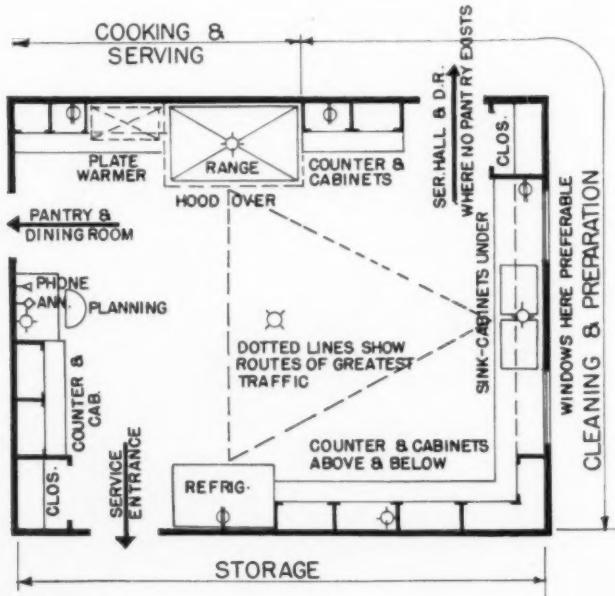


FIGURE 1

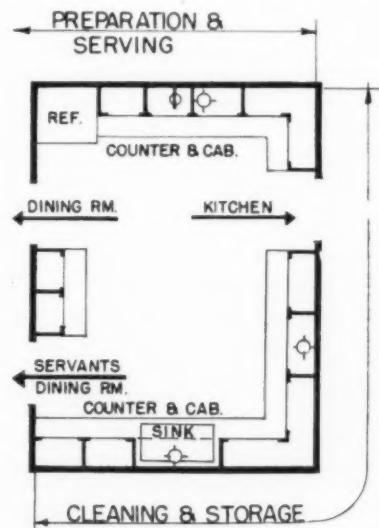


FIGURE 2

Doors. The number of doors should be kept at a minimum since kitchen and pantry wall space is of great value for cabinets and equipment. If possible, doors should be concentrated toward one end of the room, swinging away from work centers.

Equipment. Equipment of the cabinet type resting on a raised base with toe recess should be used wherever possible. This equipment is compact and makes the best use of available space. When it is combined with continuous work tops, a neat, efficient, and easily cleaned kitchen unit is the result.

Lighting. Lighting of kitchen and pantry should be given careful consideration. Care should be taken to light work centers in such a way that the worker is never in his or her own shadow. There should be a light source such as a luminaire for general lighting at the center of the ceiling in each case. This lighting should be controlled by switches at doors to kitchen and pantry.

Over the sink there should be a soffit or wall bracket light with switch or pull-chain control. This also applies at the range, planning center (if one exists), and dark or other work surfaces not centrally lighted.

Convenience Outlets. Single convenience outlets should be provided for electric refrigerator, electric dishwasher, exhaust fan, electric clock, and garbage grinder; for two or more of these machines on one outlet may overload the circuit. Double convenience outlets may be provided for percolators, mixers, toasters, and vacuum cleaners.

Heavy service heating devices such as electric range, plate warmer, and water heater should have special, heavy-duty outlets. Telephone annunciator and perhaps a radio connection may be provided.

Heating. If radiators are used,

they may be placed under the sink or in cabinets. If warm-air grilles are used the air should not be recirculated.

Kitchen and Pantry Equipment. When equipment like ranges and refrigerators is being located, care should be taken to provide sufficient space for ventilation around the units. Wall clearance for ranges varies from 0" to 6". In some cases wall insulation may be necessary. When selecting refrigerators, the swing of doors should be noted and should be appropriate to the location. Information on clearances, capacities, and door swings of the above-mentioned equipment should be obtained from manufacturer's catalog before final selection is made.

Ventilation. Removal of fumes and heat is an absolute requirement. This may be accomplished through exhaust fans direct to the outside or in conjunction with a duct system. The fans should be room-controlled for flexibility of operation.

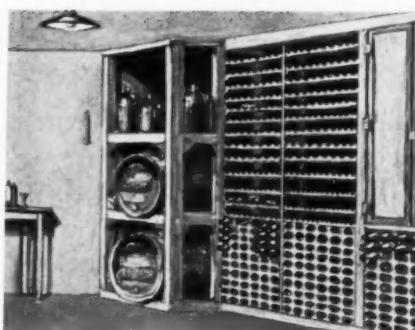
Basement

IN THE BASEMENT, space may be provided for the heavier household service functions. Among these are heating and ventilating, fuel storage, kitchen and miscellaneous storage, wine storage, trunk storage, and laundering (sometimes provided for on ground floor).

Heating and Ventilating. The space and arrangement required for heating and ventilating plants vary considerably and are best decided by a competent heating engineer, whose advice will also determine minimum ceiling heights for headroom after pipes or ducts have been placed.

Fuel Storage. Fuel storage space should be provided for wood and coal, if these are to be used in furnaces or fireplaces. If gas or oil heat is used there need be, of course, no basement space allotted for major fuel storage. Fuel storage spaces should be easily accessible to the service drive and to service stairs, particularly if fireplaces are used. Dumbwaiters for servicing fireplaces directly from basement storage are desirable.

Kitchen Storage. An ample closet with shelves and bins should be provided for kitchen supplies—preserves, canned goods, and certain vegetables. This closet should, of course, be located conveniently to the kitchen.



Wine Room

THE WINE ROOM (Fig. 3) should be placed in the basement below grade and completely enclosed with concrete masonry walls so that a near ground temperature is maintained. The room should provide space for bottle racks on at least two of the walls. There should be a space of at least 4'-0" between the faces of the racks to provide easy access to them. One of the walls may, if desired, be provided with a rack for small casks. In this case, the rack

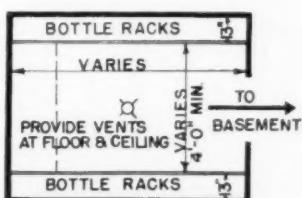


FIGURE 3

should be at least 2'-0" in depth and provided with cleats or blocks to keep the casks in position. There should be but one tight-fitting door leading from wine room to basement. This door should be not less than 2'-8" in width. Windows should definitely be omitted but the room should be provided with adequate vents at ceiling and at floor level. These should be carried to a point above grade and outside the building. No heating pipes or ducts should pass through this room.

A centrally-located ceiling outlet

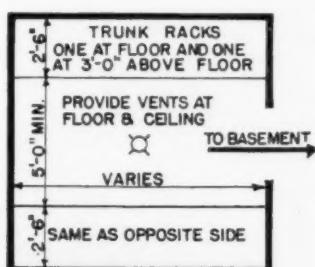


FIGURE 4



KITCHEN

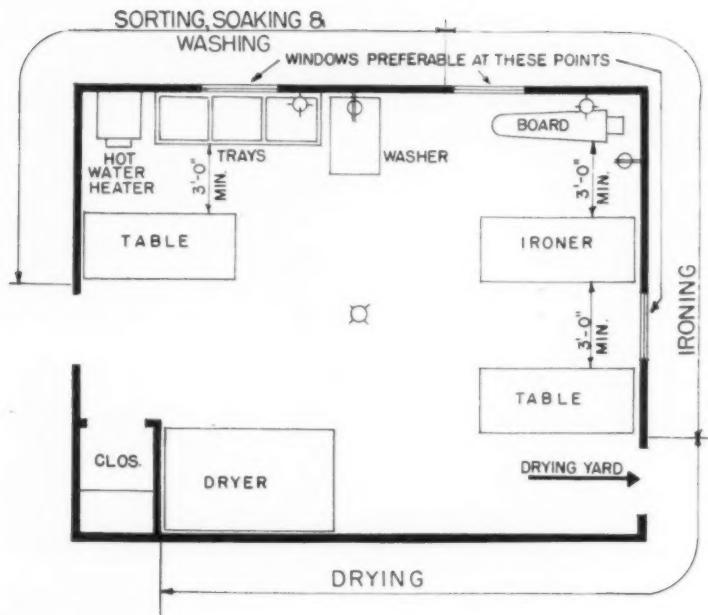


FIGURE 5

controlled at the door by a switch should be adequate for lighting purposes.

Trunk Room

THE TRUNK ROOM (Fig. 4) should be placed in the basement, close to service stairs or other point of easy access to service drive. If no windows are provided, this room should be well ventilated by means of vents at floor and ceiling which lead to some point above grade outside the building. Trunks may be stored on double racks, built one above the other, the top one being not more than 3'-0" above finished floor, the lower rack to have air space between it and the floor. To facilitate handling of large and sometimes heavy trunks, there should be a clear space between faces of racks of not less than 5'-0".

Laundry

IN THE LAUNDRY (Fig. 5), as in any other unit where work goes on, orderly planning is essential for

efficient operation. The laundry work centers should be placed in their natural order as follows:

- (1) A large work table for receiving and sorting of articles, laundry trays, and washing machine. At this center, if the laundry requirements are large enough, a hot-water heater may be installed to avoid overtaxing the house water supply at times when the laundry is in use.
- (2) A drying center to consist of a drying yard and, possibly, a mechanical dryer.
- (3) An ironing board, a large work-table for sorting and piling finished pieces, and possibly an electric or gas ironer for large pieces.

A closet, large enough to contain a clothes basket, soaps and soap powders, irons and other laundry equipment, should be built in the laundry. This closet may well be placed at or near the sorting and washing center.

It is very important that the laundry be well lighted and ventilated, with windows placed preferably over laundry trays, at ironing board, and between the electric ironer and the table where final sorting is done.

There should be access to the laundry from main basement, preferably from some point close to the service stairs. There should be, also, direct access to a drying yard.

Lighting. Lighting should consist of one or more ceiling lights for general lighting. These should be controlled by switches at the entrance

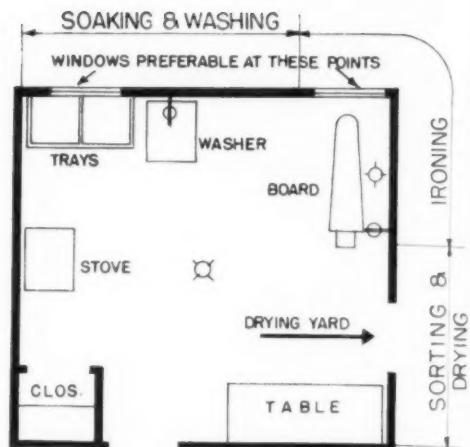


FIGURE 6

doors to the laundry. There should be ceiling or wall lights above the trays and washer, and above the ironing center if the plan arrangement requires it.

Convenience Outlets. Convenience outlets should be provided for the washer and ironing equipment.

Servants' Laundry

IN SOME CASES, the service staff is of sufficient size to require a separate laundry (Fig. 6) for its own use. The servants' laundry should then be adjacent to the house laundry and may draw its hot-water supply from there. Its plan should be the same in general principle as that of the house laundry, containing two or more laundry trays, a washer, an ironing board, a work-table, and a closet for storage of supplies and equipment.

Garage

THE GARAGE (Fig. 7) has become a very essential part of the residence. It may be detached or attached to the house proper as conditions of the local code or requirements of the owner may indicate. If detached, access to the main house may be provided by a covered walk or arcade. If attached, access may be had by means of a single fireproof door of self-closing type. The house entrance from the garage may be best provided by a porch or service hall which leads into the house proper and acts as a buffer. Since there may be considerable activity, such as servicing and moving about of the cars with attendant noise and objectionable gasoline and exhaust fumes, it is usually better practice to face the garage entrances away from the more desirable living portions of the house.

Courtesy General Electric



LAUNDRY

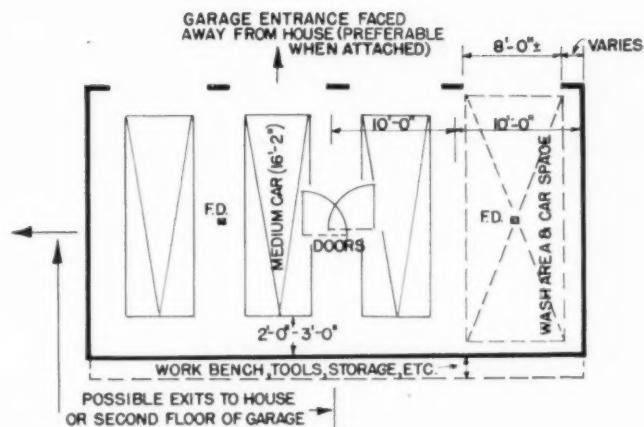


FIGURE 7

The width of the garage should be such as to permit the opening of car doors without difficulty. The depth should allow the storage of the largest available car without cramping. Space may be required for work benches, the storage of servicing supplies, tools, etc. A clear space of 2'-0" to 3'-0" should be allowed between cars and work benches, etc.

Garage Entrance. Doors may vary in width from about 7'-4" to 9'-0"; 8'-0" is generally a good practical width. The heights may vary upward from 7'-0". Doors may be selected from several types, among which are side-hinged doors of two or more leaves; single and multiple sliding doors; and overhead manually or mechanically operated doors which may be controlled electrically by means of a hand switch, a switch plate, the driveway surface photoelectric cells, and even by radio.

Garage Drainage. This may be facilitated by pitching the floor $\frac{1}{8}$ " per foot toward the doors in garages of not more than two-car capacity where a minimum amount of washing and servicing will be done. In garages of three or more car capacity, one or more floor drains are advisable. If the garage is to contain four or more cars, one drain to every two cars may be found good practice. Where considerable car washing is contemplated in a multiple-car garage a space may be set aside for this particular purpose. It may be separated from the rest of the garage by a heavy, sliding, waterproof curtain which can be drawn to prevent splashing of other cars during washing operations. When not in use, this space may be used for car storage. The floor drains from this and other spaces should be provided with easily accessible cleanouts and might well be provided with

special drains, since an accumulation of waste oil and gasoline may prove dangerous if allowed to enter a sewer, cesspool, or other disposal system.

Lighting. For general lighting, one or more ceiling outlets, depending upon the size of the garage, should be installed, with a minimum of 60-watts for each 150 square feet of floor space. These should be controlled by switches at entrance doors.

Convenience Outlets. There should be a convenience outlet for electric tools at the work bench, and one or more wall outlets, depending upon the size of garage, for extension lights.

Service Closets

IN ADDITION to the basement storage spaces such as trunk room and wine room, there should be provided on the upper floors storage spaces for such articles as vacuum cleaners, cleaning fluids, brooms, mops, dust cloths, and wood for fireplaces.



FIGURE 8

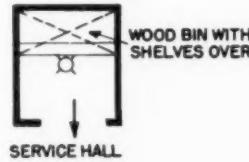


FIGURE 9

Housemaid's Closets. The housemaid's closets (Fig. 8) are used for cleaning tools such as mops and vacuum cleaners. These units should contain a slop sink with hot and cold water, shelves and hooks, and are usually located on the service corridors near main halls. Each closet should have a ceiling outlet with pull chain or switch.

Wood Storage. Wood storage (Fig. 9) is provided on floors with fire-

places by closets in the service halls; these closets may be approximately 2'-0" deep by 3'-0" in width. They are sometimes metal lined. A ceiling light with pull chain should be installed.

Linen and Sewing Room

THE LINEN ROOM (Fig. 10) is best located on service hall at a point close to main house sleeping quarters. It provides storage space for bedroom linens, blankets, etc. It may also be used as a sewing and mending room. This room should be equipped with a

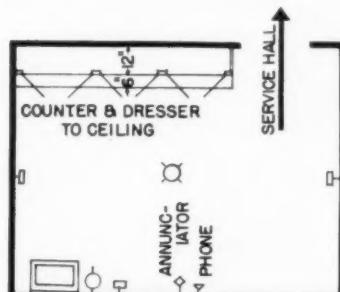


FIGURE 10

counter and cabinets for storage, and a small sink. Space should be provided for a sewing machine and for a small ironing board.

Lighting. Central lighting with switch at the door, and possibly a wall bracket for use in sewing or ironing may be provided.

Convenience Outlets. Convenience outlets should be installed for sewing machines and iron. A house 'phone, annunciator, or both, may be required.

Servants' Bedrooms

SERVANTS' general sleeping accommodations (Fig. 11) may be provided by a series of typical bedroom units. Each unit should be approximately 8'-0" x 14'-0" with a door opening from the service hall, and should be designed to contain a single bed, a closet with shelf and hanging rod, a bureau or chest of drawers, a chair

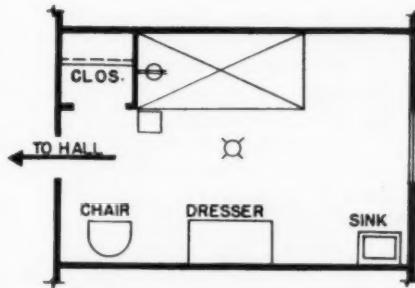


FIGURE 11

and a small night table. A small washbasin should be installed, preferably near a window, and piped with hot and cold water. This arrangement is compact, convenient, and economical, especially since it demands fewer servants' bathroom units.

Lighting. Lighting of this unit should be very simple, consisting of a central fixture controlled by a switch at the door.

Convenience Outlets. A base receptacle convenient to the bed may be used for a bed lamp or small radio.

Servants' Baths and Toilets

FOR GENERAL sleeping quarters a compact toilet unit (Fig. 12) is composed of a 5'-0" tub and a water closet, the entire floor space required being approximately 5'-10" x 6'-0". One of

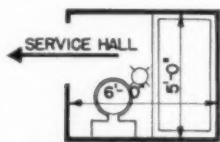


FIGURE 12

these units should be sufficient to take care of four bedroom units. It should, of course, be easily accessible from service hall or corridor.

Toilets. A water closet and wash-basin should be placed at a point easily accessible from service hall. There should be a similar unit placed in the basement in the neighborhood of the laundry.

Lighting. For lighting, both in baths and toilets, a single centrally-located ceiling fixture, controlled by a switch at the door, is sufficient.

Dining and Recreation Room

A GROUP of people such as the service personnel of a large residence must have, in addition to a place to eat, a room in which to spend leisure time, meet friends, and possibly entertain on a small scale (Fig. 13). All of these functions may well be housed in a single room. This combination dining and recreation room should be placed adjacent to the kitchen and should have access to it and to the service porch or yard. It should be provided with a sink and built-in dressers adjacent or close to the entrance from the kitchen. These will provide a place for storing and washing the servants' tableware. There should also be space for a dining table large

enough to accommodate comfortably the house personnel and an expected number of visiting servants. A minimum space of 3'-0" should be allowed at all points around the table to permit seating and passage.

The recreation or living area should be designed to contain several pieces of large furniture such as a sofa, easy chairs, with side tables, a radio, a writing desk, and possibly some bookcases. A closet built into the room will be convenient for hanging coats or for storage of small articles. Sufficient floor space should be left for indoor games and dancing.

An ample screened service porch accessible from the servants' dining room, rear hall, service hall, or kitchen should also be provided.

Lighting. Lighting for dining space may consist of a hung fixture over the table, controlled by a switch at the entrance door, and a soffit light or wall bracket over sink.

Convenience Outlets. The living part of the room may be provided with base receptacles spaced to provide power for a radio and a few table or floor lamps. An extension bell from the annunciator should be installed in the pantry or kitchen. If required, an outside telephone may also be provided.

Choice of Living Area Locations

FUNCTIONS of servants naturally influence the choice of their location in the living area. The duties of chauffeur, gardner, and governess are outstanding in this respect. The chauffeur who, when not on call, must tend to the needs of his cars, should have his quarters close to them, usually on the second floor of the garage, particularly if the garage is detached. In

addition to his regular duties, he is very often called upon to act as gardener. Where size of the estate demands, one or more gardeners may be employed, and these men are usually quartered in the same area as the chauffeur.

The nursemaid or governess, whose responsibility is the care of the smaller children of the family, must have her bedroom near the nursery. It may be adjacent to the nursery or connected with it by a small vestibule or bath.

The duties of the cook, housemaid, waitress, laundress, and chambermaid are such that these servants may be grouped in the general service bedrooms.

These service units may be grouped in separate buildings, on separate floors, or in servants' wings. Separate buildings for household servants are not considered good practice. Employers want their servants quickly available at all times.

Top-floor quarters for servants are looked upon with favor and used by some designers. This arrangement, while it is economical and keeps the size of the house to a minimum, is objected to by some owners who are disturbed by noises from movements above their own bedrooms.

The servants' wing provides the best locations for grouping of units with bedrooms over kitchen, servants' dining room and other service quarters; or, if preferred, these may be placed on the same floor as the kitchen units.

Servants should be provided with their own stairs and halls, to avoid the necessity of their using house passages for anything but the discharge of their duties. Doors, preferably self-closing, should separate all service and main house passages.

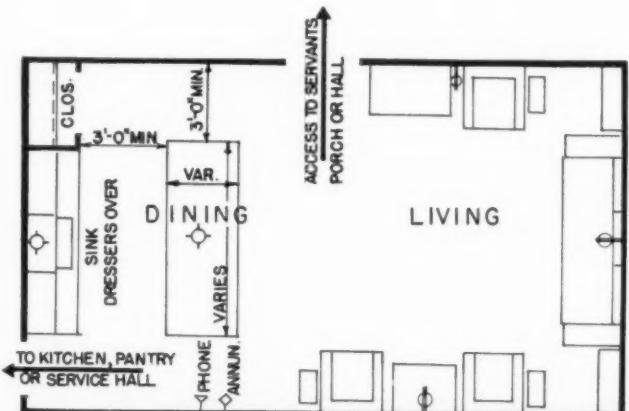


FIGURE 13

Dressing Rooms Become Major Units

By R. STANLEY SWEELY

FROM THE STANDPOINT of use, it is apparent that relatively little space provision is required for that element of a residence set apart especially for sleeping. On the other hand, it may be seen, considerable space in open area and subdivision is necessary for the fullest accommodation of functions both before and after sleeping. These operations: dressing, exercising, resting, toileting, bathing, etc.—are in time, sequence, and logical placement adjacent to the bedroom, but not within it. They fit more properly into what has become identified as the dressing room.

In an effort to establish more closely the relative accommodation value of the bedroom and dressing elements, this study offers examples of dressing room solutions. Although bedrooms are not discussed, it is suggested that these elements might readily be made smaller than is common in many of the more expensive residences; that they in fact might be planned to allow for a minimum of furniture—the beds, a night-table or two, sufficient clearance for easy movement and nothing more. All space so gained can be added to the dressing chamber. Where two bedrooms share a dressing room unit, a net saving will result.

Dressing Rooms

DEPENDING somewhat on the personal habits of the occupants as well as the size of the project, the precise space, mechanical, and decorative objectives of the dressing chamber may vary between wide limits. In location, however, it must adjoin the bedroom, either directly or through a short passage established by the loca-

tion of bath, toilet, or closet units. In order to afford the greatest privacy to the bedroom, it is here recommended that access be provided only from the dressing chamber, which room should therefore open directly to the principal hall or gallery. Where terraces or decks become a part of the plan, they also may be connected with the dressing room. Typical arrangements are shown in Figure 1.

The size of the dressing room and its supplementary elements can only be determined by the routine, habits, and personal effects of the occupant. An investigation into the scope and extent of the functions previously mentioned should establish the space provision required. These requirements, modified by economic considerations, will dictate the planning. For example, where exercising with or without equipment of one sort or another is a fixed habit, the necessary free area should be made available; storage space for the equipment when it is not in use should be provided. Even where exercising or other habits which require ample free space are not contemplated, it should be remembered that the prime purpose of the dressing chamber is to facilitate the act of dressing. This action, both for pleasure and convenience, requires sufficient free area to permit moving about for testing of effects and choice of dress or accessories. With this in mind, it is suggested that the chamber proper offer a minimum of 150 square feet; an even larger area is desirable. Here may be placed chairs, a lounge, dressing tables, perhaps even a small desk.

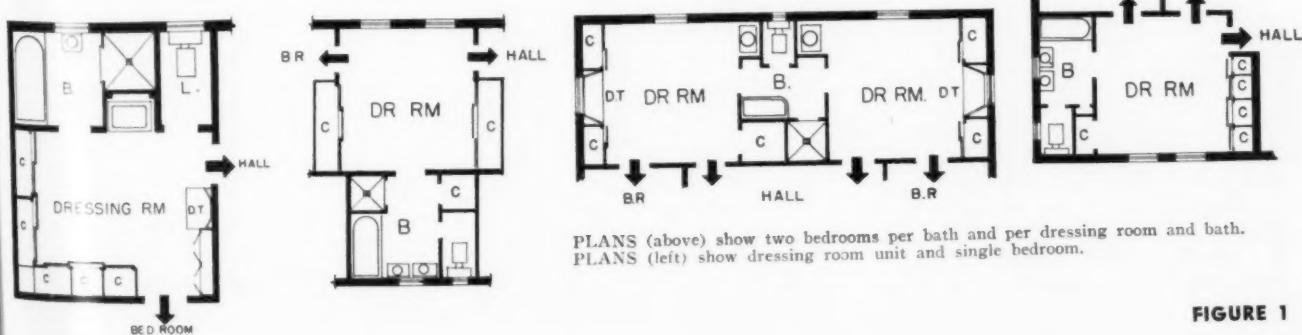
Mirrors are essential in a dressing room and should be installed in abundance. Unquestionably, some portion of the wall area should be available for mirrors from floor to 7 feet above.

The sliding doors or panels of the closets may be mirrored on the room side. Conceivably, this entire room might be mirrored, although this is likely to result in a condition of considerable confusion unless it is adroitly handled.

A variety of finishes may be considered in the completion and decoration of the dressing room. Tone and character should be warm and unobtrusive; the activities for which this room provides, are for the most part carried on in a state of incomplete dress. The trying-on of clothes, determination of ensemble, etc., indicate the need for elimination of distracting influences in the surroundings. For the floor, carpeting, linoleum, rubber, and composition tile offer an infinite selection. For the walls, fabric or paper wall-coverings are always available in appropriate colors and patterns. Or again new plastic materials, cork, wood veneers, or painted surfaces may ultimately be the choice. All should be harmoniously assembled to express the character and function of the room as well as that of its occupants.

Closets

THE STORAGE of clothes and articles of dress should be the primary adjunct of the dressing rooms. Hanging closets, shelves, batteries of sliding drawers, cubicles, and racks should be not only adequate but easily accessible, logically arranged for use. Since provision, in most cases, is to be made for male and female attire, these sections should be separated so



PLANS (above) show two bedrooms per bath and per dressing room and bath.
PLANS (left) show dressing room unit and single bedroom.

FIGURE 1



Courtesy Pittsburgh Glass Institute



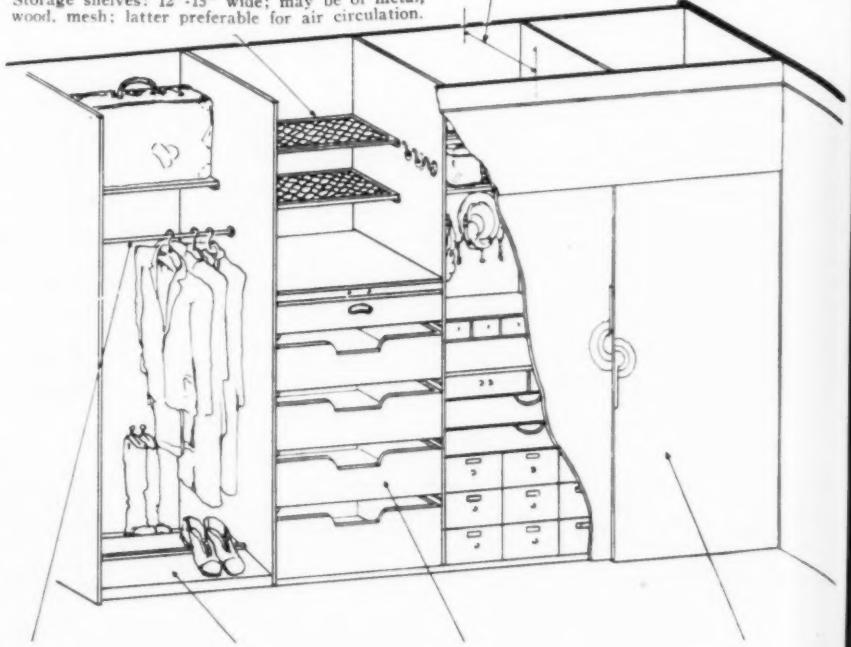
Photo by Hedrich-Blessing, Courtesy Crane Co.

as not to impede simultaneous use. The units should be built in, preferably behind sliding panels, since these permit ready access without the loss of room space caused by swinging doors. Folding or swinging doors may, of course, be installed where these types are preferred or where the greater hardware expense entailed in the selection of the sliding door must be considered. Although the choice of materials for the storage furniture (drawers, shelving, etc.) is largely dictated by cost considerations, it is recommended that only the best cabinet work and hardware be employed to insure rugged and smooth operation for a long period of time. Every effort should be made, in detailing the storage space, to achieve an enclosure as nearly dustproof as possible. Typical closet and storage spaces are shown in Figure 2.

Lighting of this room should be both direct and indirect: the latter by cove light sources reflected from the ceiling or wall troughs which reflect light from the wall surfaces; the direct lighting from portable lamps augmented by bracket fixtures over the dressing tables. All closets should have individually controlled direct light. Convenience outlets should be installed on all walls for electrical

FIGURE 2

Storage shelves: 12"-15" wide; may be of metal, wood, mesh; latter preferable for air circulation.



Hanging rod: wood, of 1" diameter; metal, of $\frac{3}{4}$ " diameter; average height 5'10"; 3'0" maximum unsupported length; capacity 3 garments per lin. ft.

Shoe storage: 12" long 20° slope; capacity 1 pair shoes per 8"-10"; where in tiers 8" separation needed.

Sliding drawers: 4"-14" deep; maximum length or width 2'-0"; may have open, flush, or cutout fronts; for female use provide smaller sizes with separate compartments for shoes, hose, and accessories; provide sliding inspection board.

Sliding, folding, swinging, or rolling doors: 6'-8" to 7'0" high with a maximum width of 4'0" except for swinging doors maximum width 3'0".

exercising apparatus as well as for lamps.

Bathroom

THE BATHROOM—since it is a supplementary part of the dressing room—should be closely arranged to it. At the same time it should afford convenient approach from either the bedroom or the hallway especially when this room also contains the water closet. Recommended standards include a dressing and bathroom combination for each master bedroom. Less conducive to complete privacy but still appropriate, especially to less frequently occupied suites, would be a pair of bedrooms for each unit combination.

Lavoratories, either singly or in pairs, may be installed in the bathroom or in the dressing room proper. Many advantages indicate that the dressing room location of these fixtures is preferable. Among these are the frequency of use, the more or less constant resort to this fixture in the dressing process, and the possibility of including storage space for towels and other accessories close at hand. This is an impractical arrangement in the bathroom because of the difficulty of moistureproofing the storage spaces. One disadvantage of having the lavoratories in the dressing room, however, is that here water may splash on surfaces not designed for it.

Separate shower compartments, as well as tubs, should be provided in

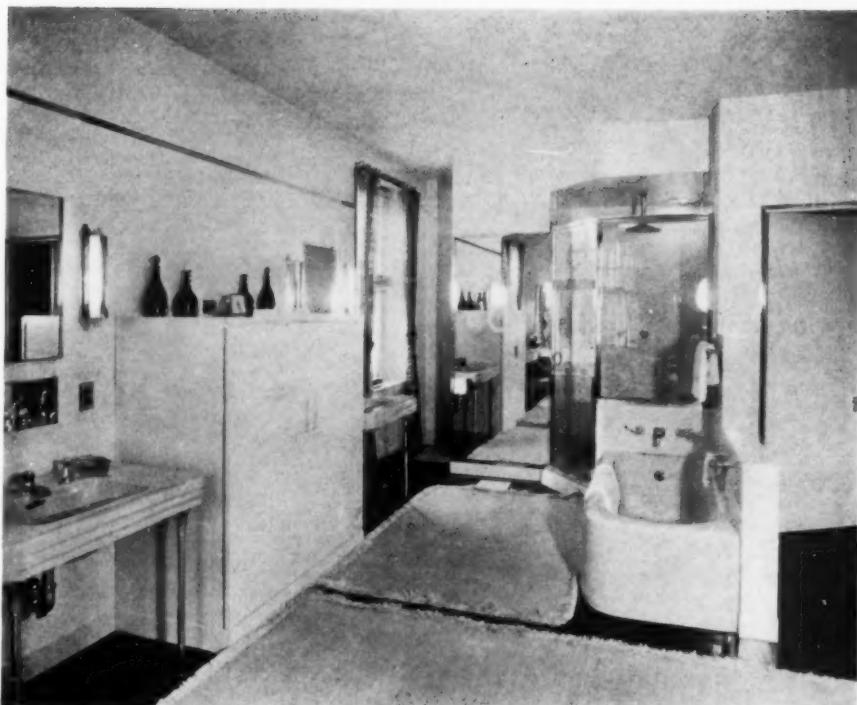


Photo courtesy Crane Co.

the bathrooms. Tubs may be either built in a recess or freestanding, depending upon the space allotted to these rooms. Complete waterproofing of the floor and walls is necessary and may be best accomplished by installing material impervious to water penetration. Tile continues to be the foremost material offering this protection although various new products in glass, metals, and composition

materials are equally effective.

Water closets should be installed in separate compartments which, preferably, should be directly accessible from the dressing room. This arrangement will permit complete isolation. Sound absorptive materials can also be incorporated in a separate room, whereas this presents difficulties when attempted in the bathroom because of the high moisture factor. Then, too, the private compartment can be ventilated readily without undue expense or effect upon other functions.

Consideration should be given to the installation of sufficient storage receptacles in the bathroom, toilet compartment, shower, etc. Towel racks, for instance, should be placed conveniently to the lavoratories, tubs, and showers and may be made of glass, metal, or other waterproofed materials; they should be available in such numbers as the requirements of the users indicate and may be in the form of bars or shelves. Wherever possible, a rustproof laundry chute should be installed in the bathroom, connecting with the laundry. When this is not possible, a ventilated clothes hamper for the storage of soiled linen may be built into the wall. Cabinets for the storage of toilet articles and medicines should also be built in over the lavoratories. Mirrors should be so mounted that access to the cabinet is possible while the mirrors are in use.

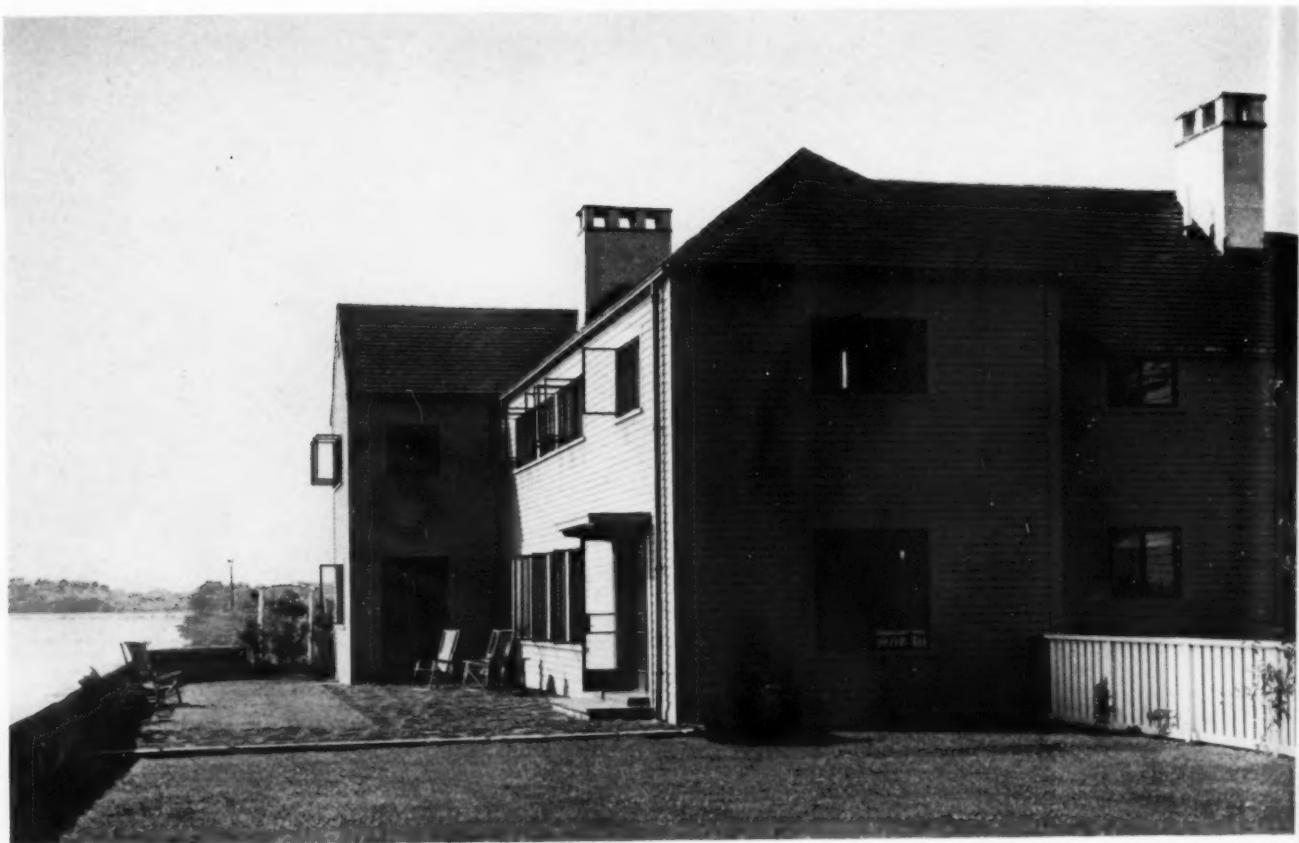


Photo by Edgar Lloyd, Courtesy Pittsburgh Plate Glass

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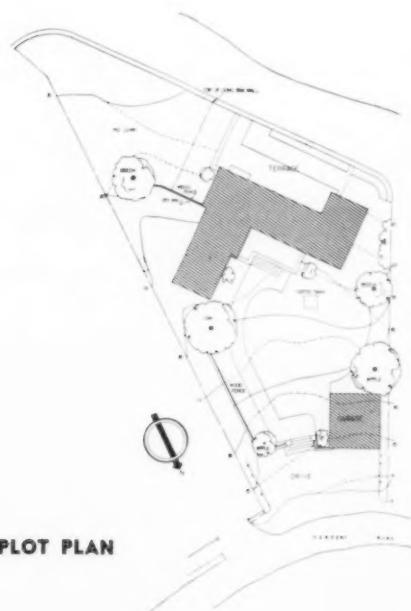
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1 A MASSACHUSETTS RESIDENCE



**GEORGE W. W. BREWSTER, JR.
ARCHITECT**

RESIDENCE OF MR. AND MRS. L. H. H. JOHNSON, JR.
MARBLEHEAD, MASSACHUSETTS



PLOT PLAN

SECOND FLOOR PLAN



FIRST FLOOR PLAN



BUILDING TYPES



ELEVATION AT ENTRANCE DRIVEWAY

INTENDED primarily for summer occupancy, although designed for comfort the year 'round, this residence commands an ocean view from every window (see cover illustration). It is also situated to exclude views of roads or other houses from the master section, except on the northwest side—thus heightening the sense of privacy and isolation. Planned with a forthright directness, no attempt has been made to follow any style; but the structure merges properly into the character of its location. This is partly accomplished by the color scheme of the exterior: walls light gray, black slate roof, white chimneys and fence pickets, and dark gray windows, repeating the coloring of the surrounding rock.

SCHEDULE OF EQUIPMENT AND MATERIALS

FOUNDATION	Concrete	Door	Flush birch veneer in master's wing, by Hall-Gregg, "Overhead Doors" in garage
STRUCTURE	Wood frame, 6" studs	HARDWARE	Special level handles; all hardware in master's wing, satin-finish chrome—W. C. Vaughan Co.
EXTERIOR		PAINTING	Flat oil
Walls	Clapboard	PLUMBING	Crane Co. fixtures
Roof	Slate, 1/4" Munson quarry run (black), laid 6 1/2" to the weather, random 8" and 10" widths	HEATING	Hot-air, gas-fired furnace with thermostatic controls—Janitrol, Surface Combustion Corporation
Windows	Steel casement, bronze screens, all by Hope, Inc.	ELECTRICAL INSTALLATION	B.X. wiring; all main rooms have switch control of base plugs
Metalwork	Flashings and gutters are lead-coated copper	INSULATION	2"-rock wool on inside of rough boarding; 1/2" Spray-o-Flake on inside of rock wool
INTERIOR			
Floors	Wood joists; finishes, wood and Armstrong linoleum		

1 A MASSACHUSETTS RESIDENCE



LIVING ROOM



STAIR DETAIL

The living room walls are painted a dark ivory, except for the north wall, which extends through into the dining room. This wall is painted white. The remaining three walls of the dining room are light blue-gray. The floor is of alternate squares of light and darker ash.

The stair risers and treads are of wood, the rail of polished steel. Walls are white.

C E 12 ROOMS - 5 BATHS - COST 50¢ PER CU. FT.

1



In the library the walls are sand-colored, with the ceiling blue-gray. The floor is of random width, dark oak, pegged. Natural birch and satin chrome fittings were used for the built-in book shelves and cupboards. This motif is repeated in the fireplace detail where trim is of polished steel and birch. The fireplace brick is painted black.



The master's bedroom (not shown) has three walls white and one battleship gray; its ceiling is canary yellow. The doors are flush panels of natural birch.



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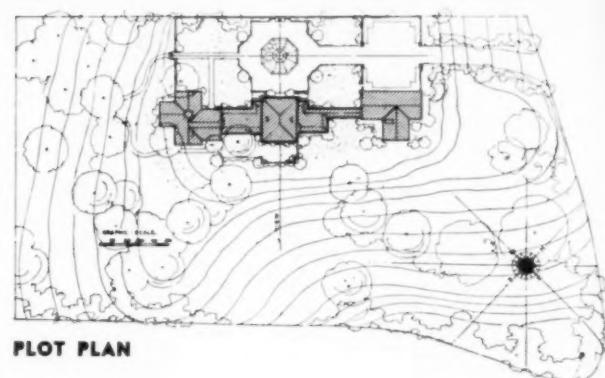
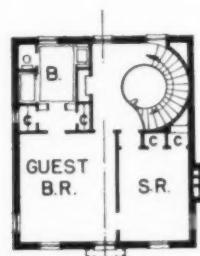
BUILDING
TYPES



WILL W. GRIFFIN
ARCHITECT, A.I.A.

RESIDENCE OF D. D. ROSS
BILTMORE, NORTH CAROLINA

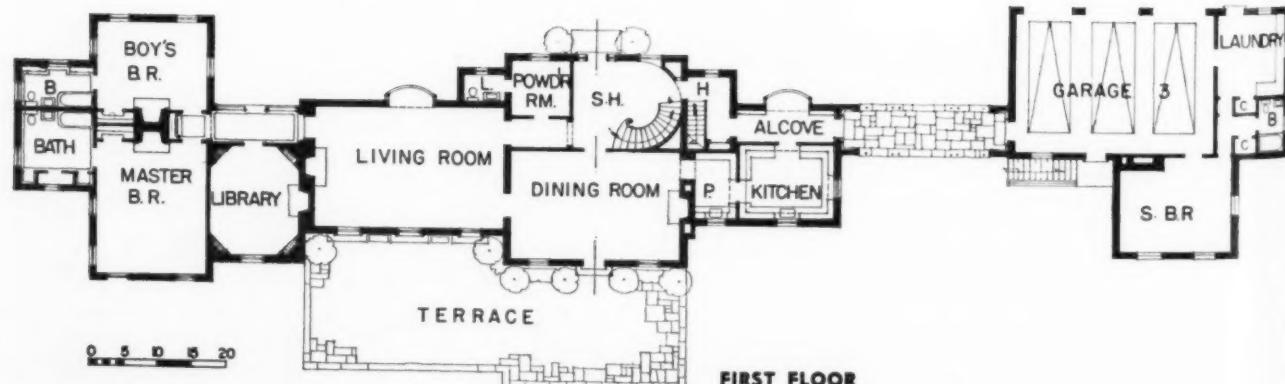
SECOND FLOOR



PLOT PLAN

0 5 0 5 20

FIRST FLOOR



BUILDING
TYPES

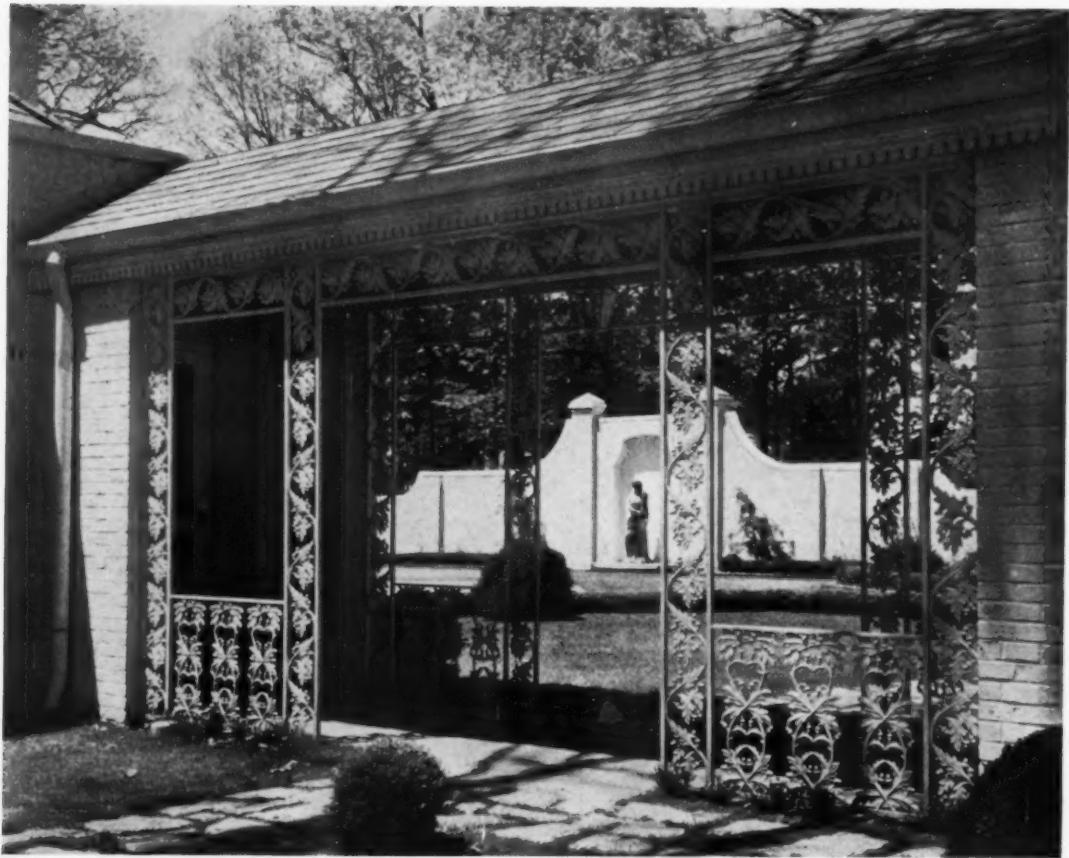


Photos by Robert W. Tebbs

REAR ELEVATION

SCHEDULE OF EQUIPMENT AND MATERIALS

FOUNDATION	Brick walls on concrete footing	Doors	Northern white pine
STRUCTURE	Exterior walls—2" x 4" and 2" x 6" studs Interior partitions—2" x 4" studs All framing lumber—long leaf yellow pine	Trim	Best grade yellow pine
EXTERIOR	Walls Roof Metalwork Windows	CHIMNEY	Common brick; terra cotta lining; dampers—covert; incinerator in service chimney
	4" common brick anchored to wood sheathing; 15-lb. felt building paper Penn, black slate on 30-lb. felt and wood sheathing and 5-ply tar and gravel roof for flat surfaces Termite shields, galvanized iron; all other work, copper Wood, double-hung; triple-hung in living room and dining room—Western Ponderosa Pine	INSULATION	All exterior walls and interior bath walls and exposed flat ceilings: Johns-Manville rock wool
INTERIOR	Floors Circular stair hall and passage to living room, Belgian black marble on concrete slab; pantry and kitchen, Armstrong battleship linoleum; loggia, rubber tile; baths, 4" x 4" matt-finish floor tile; all other rooms, first grade white oak, 2 1/4" x 13/16"	ORNAMENTAL IRON	Circular stair railing, bronze and wrought iron anchored to steel stringer—Stewart Iron Work Co.; Loggia work by Smyser-Royer Co.
		PAINTING	Exterior: 2 coats Bondex Interior: 4 coats flat finish Minawax Co., Inc., finish
		PLUMBING	5 coats of egg shell enamel finish Steel pipe; Crane Co. fixtures
		AIR CONDITIONING	Baths and kitchen heated by convection heaters; otherwise grilles in the baseboard—Trane Co.
		HARDWARE	All Colonial type solid brass



DETAIL of cast-iron work in arcade

Photos by Robert W. Tebbel



LIBRARY

C E 10 ROOMS - 5 BATHS - COST 70¢ PER CU. FT.

2



DINING ROOM with living room beyond

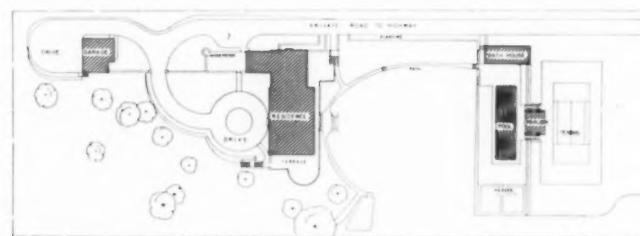
3 A PENNSYLVANIA ESTATE



GEORGE HOWE ARCHITECT

Photos by Schnall

RESIDENCE OF ISAAC D. LEVY
GERMANTOWN, PENNSYLVANIA



PLOT PLAN



BASEMENT PLAN



FIRST FLOOR PLAN

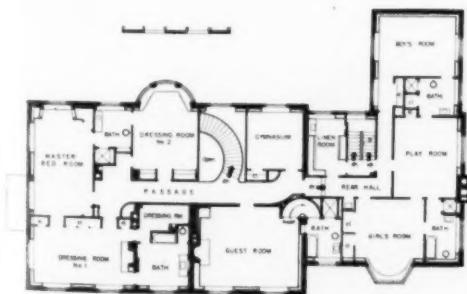
28 ROOMS - 7 BATHS - COST 60¢ PER CU. FT. **3**



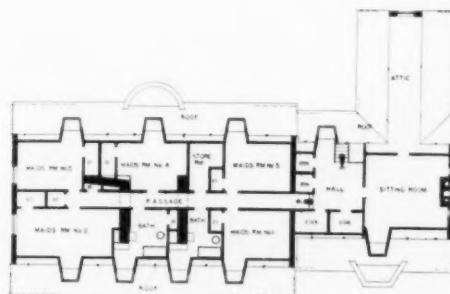
ELEVATION AT DRIVEWAY ENTRANCE

SCHEDULE OF EQUIPMENT AND MATERIALS

FOUNDATION	Concrete, Wasco flashing fabric No. 2, waterproofing	Tile	Robertson Art Tile Co.
STRUCTURE	Steel and concrete	GLASS	Structural glass walls in kitchen and pantry, plate glass in all sash and mirrors—Pittsburgh Plate Glass Co.
EXTERIOR		INSULATION	Rock wool 6" in roof, 7" in all exterior walls; Chamberlain weather stripping
Walls	4" brick painted with Bondex, 8" terra cotta back-up	PLUMBING	Kohler and Crane Co. fixtures
Roof	Gypsum plank on Bethlehem bar joists, Emack black Penn. slate surface	HEATING	Split system, steam and warm air, humidity control; 2 Bryant gas heaters
Metalwork	Lead-coated copper	ELECTRICAL INSTALLATION	Switches and receptacles, P. & S. Despard, J. F. Garde and Wendel fixtures; RCA remote control radio installation
Ironwork	Smyser-Royer Iron Works	KITCHEN EQUIPMENT	Excel Metal Cabinet Co., Inc. cabinets; "Quality" range; Frigidaire refrigerator; "Chicago" laundry dryer
Sash	Lundell-Eckburg steel windows	HARDWARE	Schlage
Doors	Dahlstrom and Kalman steel bucks; wood doors, W. D. Crooks & Sons	VENETIAN BLINDS	Watson Manufacturing Co.
INTERIOR			
Floors	Master section, first floor, walnut in block and herringbone pattern; game room fir-end wood blocks; service section, Armstrong linoleum; children's room maple in block pattern; master section, second floor, oak laid in block pattern; all wood floors laid in mastic over concrete slabs		



SECOND FLOOR PLAN



THIRD FLOOR PLAN

3 A PENNSYLVANIA ESTATE—COST 60¢ PER CU. FT.



BASEMENT GAME ROOM showing bar detail

Photos by Schnall



KITCHEN

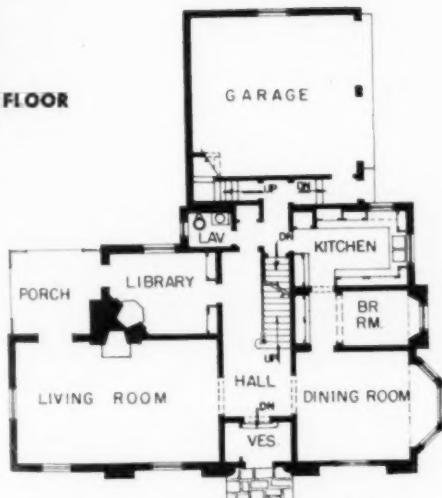
BUILDING
TYPES



MYRON T. HILL
ARCHITECT

RESIDENCE OF MR. AND MRS. JOSEPH R. MAHAN
OTTAWA HILLS, OHIO

FIRST FLOOR
PLAN



SECOND FLOOR
PLAN

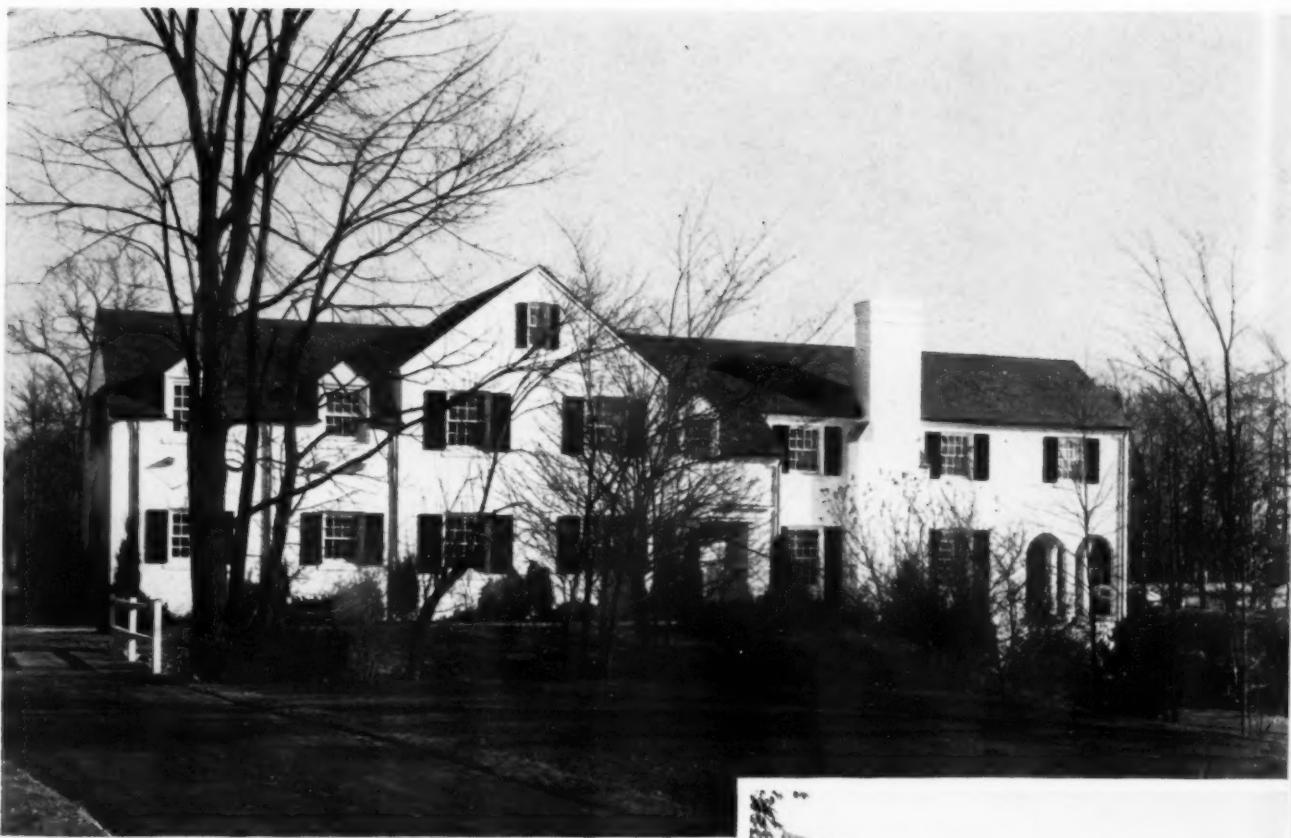


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SCHEDULE OF EQUIPMENT AND MATERIALS

FOUNDATION STRUCTURE	Cinder concrete block Wood frame, brick veneer; wood siding over service wing	Stairs HARDWARE	Oak treads; remainder of birch Solid bronze, Sager; chrome in kitchens and baths
EXTERIOR		PAINTING	Exterior brick paint, Du Pont; exterior and interior wood trim, Sherwin-Williams
Roof	Slate, Black Bangor; built-up gravel surface roof over garage	BATHROOM EQUIPMENT	Fixtures, Standard Sanitary Co.; medicine cabinets, Miami Cabinet Co.
Sash	Wood, double-hung, Curtis Silentite	HEATING	Hot air circulation, humidification type, Fox Furnace Co.
Glass	Double strength	WATERPROOFING	Asphaltic, Truscon Laboratories
Screens	Aluminum mesh with steel frame	BUILT-IN FEATURES	"Kitchen Maid" cabinets; towel cabinets, book cases, shoe racks, card table, storage
INTERIOR		INSULATION	Rockwool, Johns-Manville, applied to side walls, second floor ceiling, over unexcavated areas and in deck over living room and on floor under servant's bedroom
Floors	Tile in bathrooms and vestibule; linoleum in kitchen, breakfast room and service hall; elsewhere, oak by D. M. Rose & Co.		
Wall Coverings	Imperial Glencraft wallpaper		
Woodwork	Library, No. 1 common butternut; recreation room and basement stairhall, knotty pine; all other trim, clear stock poplar		

5 A N O H I O R E S I D E N C E



KARL BUCKINGHAM HOKE
ARCHITECT, A.I.A.

RESIDENCE OF MR. HENRY R. BLOCH
OTTAWA HILLS VILLAGE, OHIO



Insert photo by Harold E. Waltz, Inc.



BASEMENT PLAN



FIRST FLOOR PLAN

E 18 ROOMS - 5 BATHS - COST 44¢ PER CU. FT. 5



Photo by Harold E. Walts, Inc.

SCHEDULE OF EQUIPMENT AND MATERIALS

FOUNDATION

Hollow tile, plastered on exterior, then given two coats of waterproofing

STRUCTURE EXTERIOR

Roof
Woodwork
Windows

Wood frame, brick veneer

Black slate

White pine

Anderson window frames and sash, double-hung and casement; double-standard, "A" quality glass

Copper

Overhead type in garage

Metalwork

Doors

INTERIOR

Walls

Living room and hall are painted canvas; boy's room and basement recreation room are knotty pine, stained; master bathroom walls are Vitrolite; other bathrooms are tile; some walls are papered; elsewhere enamelled woodwork

Generally carpeted; dining room and break-

INSULATION

PLUMBING

HEATING

ELECTRICAL INSTALLATION

KITCHEN EQUIPMENT

PAINTING

fast room floors are "X-ite"; some floors are of oak plank; tile in bathrooms

Exterior side walls and second floor ceiling are insulated with glass wool 4" bats

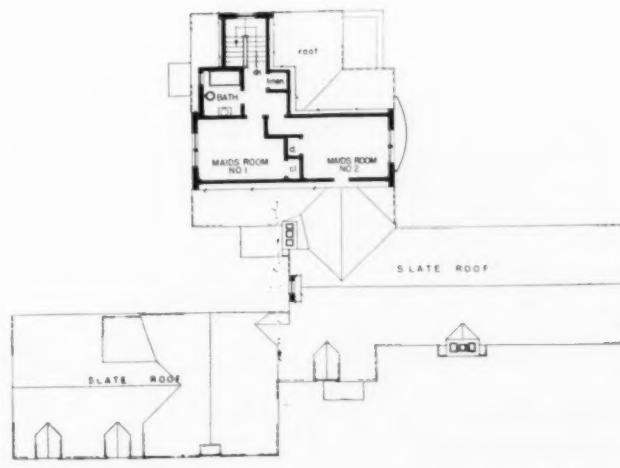
Standard Sanitary Co. fixtures; all copper piping; black vitrolite combination lavatory and dressing table in powder rooms

Split system: the service area by direct radiation (concealed) and main portion air conditioned; General Electric oil-burning boiler and conditioner

Rigid conduit in basement and B.X. above; fixtures—mostly direct, some indirect

Kitchen and pantry cupboards are Napanee Kitchen Cabinet Co.

Exterior wood trim 3 coats; brickwork 2 coats of Cabot's Doublewhite





DAVID S. DOUGLASS
ARCHITECT

Photos by Graphic Arts Co.

RESIDENCE OF DR. LESLIE P. ABBE
WEST HARTFORD, CONNECTICUT

THIS RESIDENCE is uncompromisingly in a traditional style. The hand-hewn timbers of native dried white oak have been adze-tooled by an old ship timberman and finally stained a very dark brown. The planting, which cost an additional \$1,000, belies its less than two-year placement.



FIRST FLOOR PLAN



SECOND FLOOR PLAN

E 12 ROOMS-3 BATHS-TOTAL COST \$37,000

6



VIEW OF REAR PORCH AND TERRACE



LIVING ROOM, sunroom beyond;
wood paneling and open timbers
are of walnut-stained gumwood

SCHEDULE OF EQUIPMENT AND MATERIALS

FOUNDATION	Poured monolithic concrete
STRUCTURE	Brick and stone
EXTERIOR	
Walls	Brick, stone, stucco, and hand-hewn timber
Roof	Variegated semi-glazed tile — Ludowici - Celadon Co.
Sash	Wood, double-hung
Screen	Copper
Sheet Metal	Copper
INTERIOR	
Floors	Wood joists Oak floor finish except for tile in bathrooms and sunrooms, slate on terraces, and rubber tile in kitchen

HARDWARE	Corbin
INSULATION	Rock wool, Johns-Manville; applied to roof and walls
WATERPROOFING	Asphaltic
HEATING	Recirculating hot water, gas-fired Bryant boiler
PLUMBING	Standard Sanitary Co.
PAINTING	Pratt & Lambert, Inc.
GLASS	Penn Vernon, standard
KITCHEN EQUIPMENT	Domestic Science cabinets; dish washers, sinks, electric ranges, electric refrigerator

7 A NEW YORK RESIDENCE



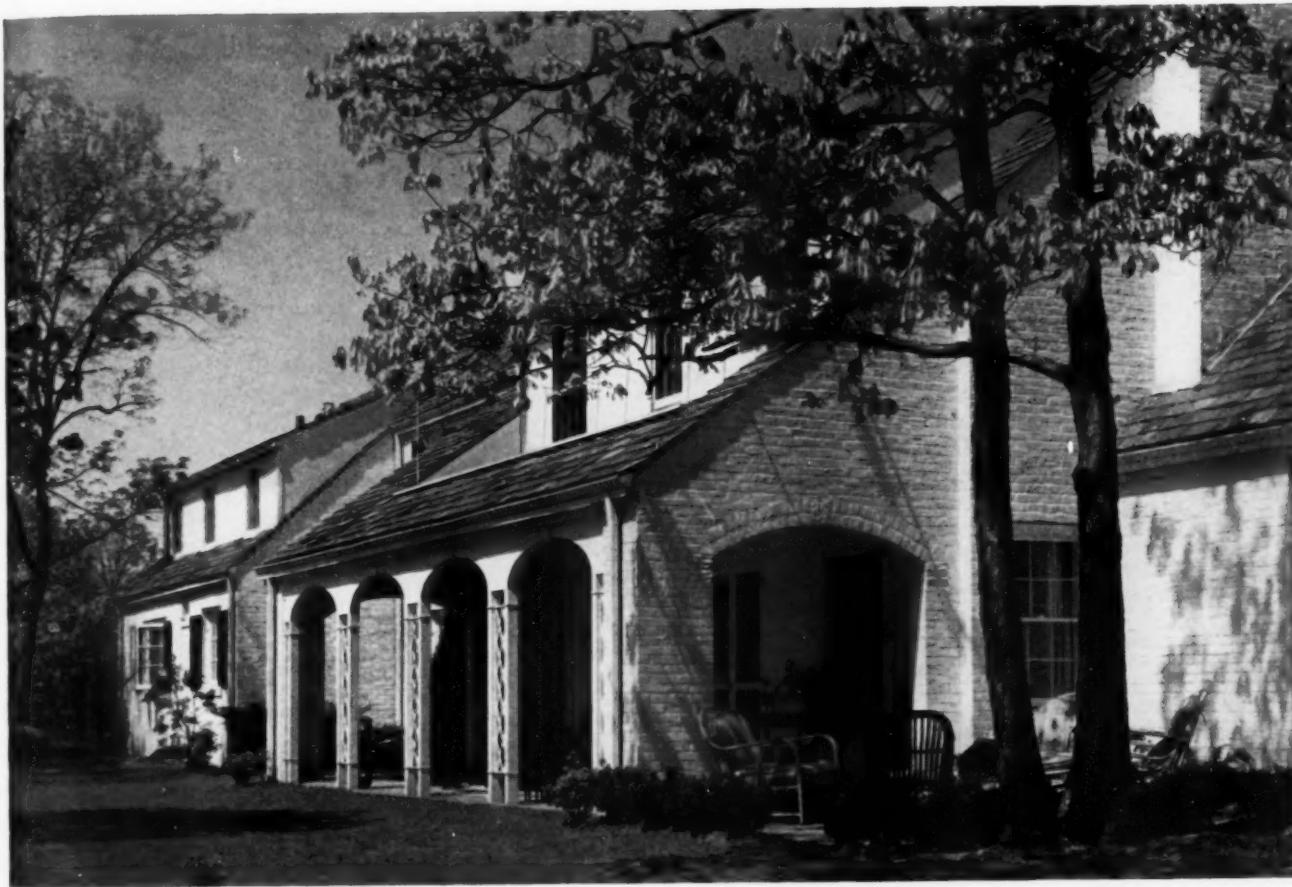
Photos by Robert W. Tebbs

**PHILLIPS BROOKS NICHOLS
ARCHITECT**

RESIDENCE OF PRIOR SINCLAIR
HARRISON, NEW YORK



BUILDING
TYPES



PORCH

SCHEDULE OF EQUIPMENT AND MATERIALS

FOUNDATION	Poured concrete footings and walls
STRUCTURE	Wood frame
EXTERIOR	
Walls	4" common brick painted 2 coats of Bay State Coating
Roof	Rough-quarried antique texture Vermont slate in random widths
Terrace	Flagstone
Metalwork	Copper
INTERIOR	
Walls	Hard white plaster on metal lath, palm-finished at beam ceiling in library; painted generally, except that dining room, living room, bedrooms, and hall are papered; library is stained
Floors	White oak strip, except tile in bathrooms, Armstrong linoleum in kitchen
Sash	Wood, double-hung, casement
PLUMBING	Brass pipe and fittings; Standard Sanitary Company fixtures
HEATING	Dunham differential vapor system with orifice control; Fitzgibbons steel boiler; American Radiator Co. humidifier to master's portion of first floor
INSULATION	Rock wool in walls and second floor ceiling

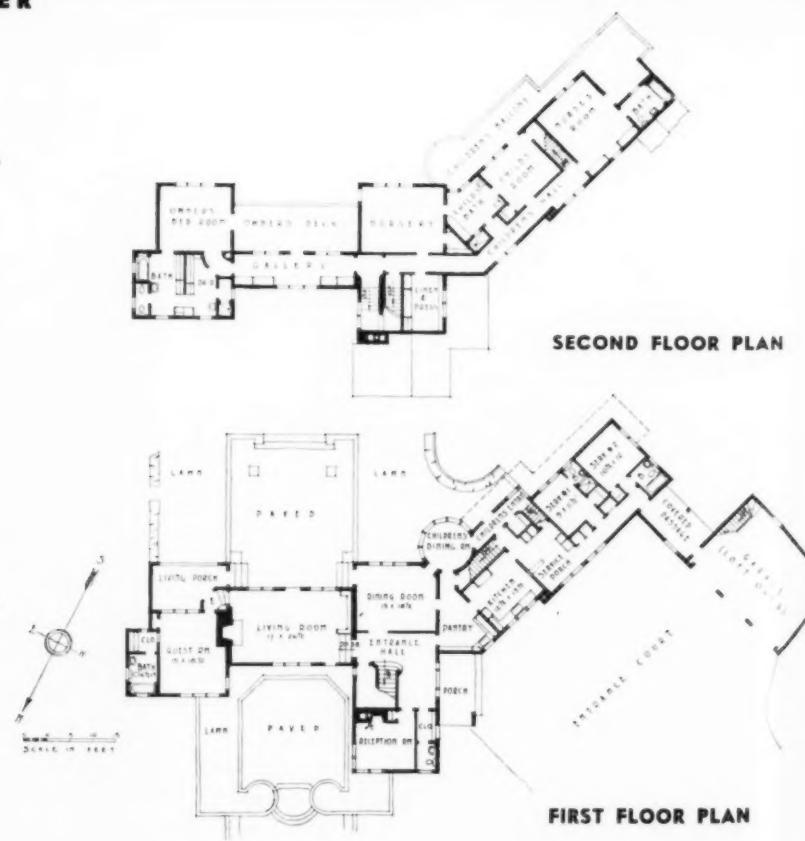
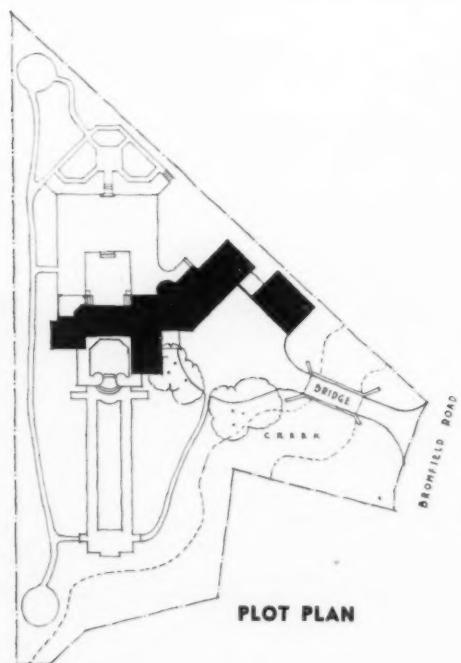


LIBRARY



WILLIAM WILSON WURSTER
ARCHITECT, A.I.A.

RESIDENCE OF GEORGE POPE
SAN FRANCISCO, CALIFORNIA



BUILDING
TYPES



ENTRANCES



Photos by Gabriel Moulin

PLANNED to stress the outdoor life, each bedroom of this residence has access to the southerly-exposed sun deck. The house is located so that the limited site yields the longest possible vistas. The door detail (left, above) represents a modern adaptation of the traditional Dutch door.

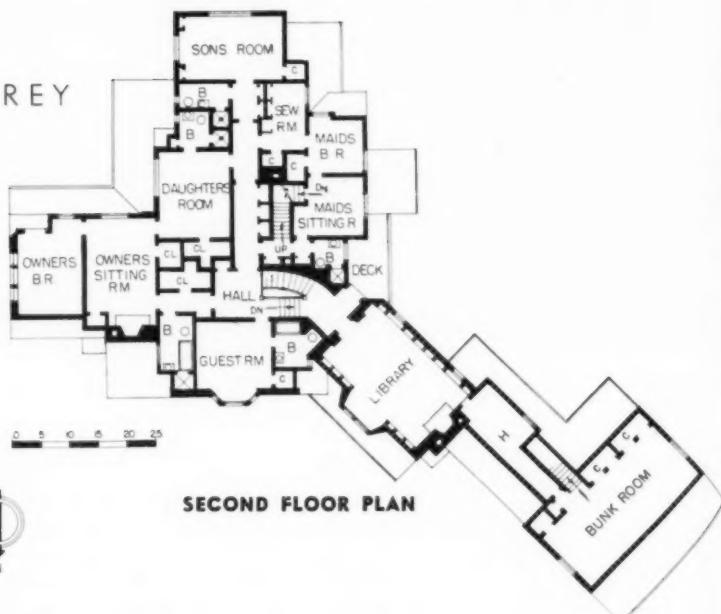
SCHEDULE OF EQUIPMENT AND MATERIALS

FOUNDATION	Reinforced concrete, waterproofed	Floors	Oak in living room; Douglas fir, linoleum covered elsewhere
STRUCTURE	Wood frame	Doors	Douglas fir veneered, flush slab
EXTERIOR		Woodwork	Trim and cabinets, vertical grain Douglas fir
Walls	Wood studs, wood sheathed and cement plastered, brushcoated for color	HARDWARE	"Watertite" on awning type sash
Roof	"Perfect" clear cedar shingles	PLUMBING	"Standard-Pacific", Standard Sanitary Co.
Trim	Wood	HEATING	Warm-air system, gas-fired — Aladdin Heating Corporation
Sash	"Awning" Type	PAINTING	Interior woodwork: 2 coats of lead and oil, 1 coat of enamel Exterior: 3 coats of lead and oil
Doors	Sugar pine, flush veneer, Chamberlin weatherstripping	GLASS	Libby-Owens-Ford: plate glass in Dutch doors; "A" quality single strength elsewhere
INTERIOR			
Partitions	Wood studs, with plaster over wire mesh and wood lath		



OTHO McCRAKIN
ARCHITECT

RESIDENCE OF W. D. P. CAREY
HUTCHINSON, KANSAS



SCHEDULE OF EQUIPMENT AND MATERIALS

FOUNDATION

Concrete, stone-faced

STRUCTURE

Wood frame and masonry

EXTERIOR

Walls

Stucco, half timber siding, and fieldstone ranging from cream to brown

Roof

Red and black range tile

Metalwork

Copper

Sash

Anderson wood casement sash with aluminum mesh screens

INTERIOR

Floors

Wood, except tile in bathrooms, linoleum in kitchen

Walls

Stained oak in lounge, library, and dining room

PLUMBING

Copper tubing, Standard Sanitary Co. fixtures

HEATING

Carrier hot-air circulating system designed for

future cooling equipment

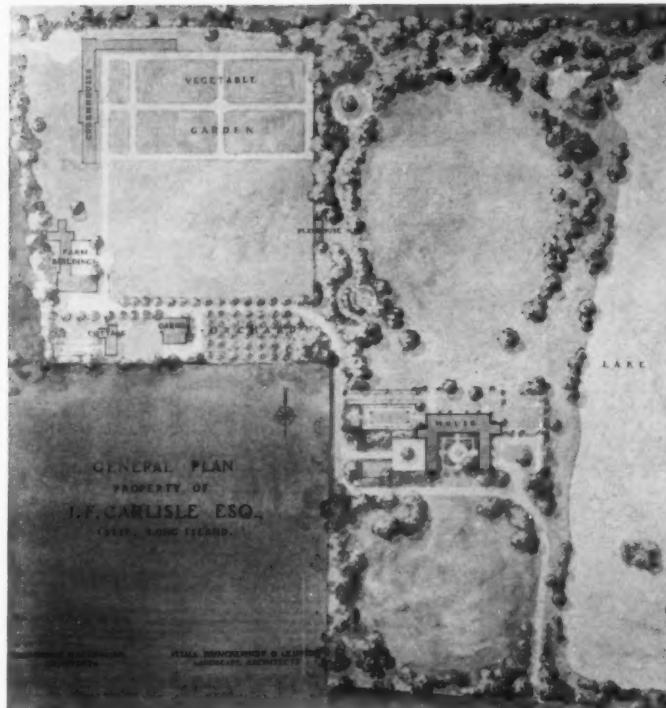
Sargent Co.

4" rock wool, walls and roof

Planning the Development of Land for Human Use and Enjoyment

By ALFRED GEIFFERT, JR.

ALFRED GEIFFERT, JR., is a member of the firm of Vitale & Geiffert, Gilmore D. Clarke, Landscape Architects. In his practice of over 25 years, he has been active in many phases of landscape developments. He has been consultant landscape architect to the University of Illinois, Rutgers University, New Jersey College for Women, and at present is consultant to Rockefeller Center and a member of the Board of Architectural Consultants of the U. S. Treasury. He was a member of the Board of Design of the Chicago World's Fair of 1933 and is now serving on the Board of Design of the New York World's Fair of 1939. A number of private estates for which he is responsible are those of R. B. Mellon, Myron C. Taylor, Percy Rockefeller, and Governor Lehman. In the field of city planning, his activities have centered on the Town Plans of Scarsdale and Pleasantville, New York.



DESIGNING for the use of land falls into two phases:

1. Designing by mental process on the land in question, painting a mental picture of a complete composition, embodying all units involved.

2. Designing on paper as a means of proving the adaptability of the mental picture, and further to make it graphically readable to others.

Invariably the designers—architect and landscape architect—are called in to advise on the development of land already in possession of the owner. Boundaries have been fixed and usually present a highway frontage on one side, and on the other three sides properties variously developed. Access to the property is, therefore, already fixed by an entrance on the highway. Definite location of this entrance depends upon topography, convenience of access from the surrounding countryside, ease of approach to the house and its dependencies, not forgetting the preservation of trees and other existing plant life.

The entrance to the property loca-

ted, the general direction of the road to the house site has thereby been determined. Topography and other surface features, such as trees, water and rock, now play an important part in planning the location of the house as well as the approach to it.

Usually at this stage the style of house and the interior requirements of the owner have been drawn in sketch form, so that a preliminary arrangement of the house area is before us. This should disclose a fairly clear demarcation between the living and the service portions of the house. With this plan before us our minds turn toward orientation and location of the house as part of a larger general scheme to take the fullest advantage of the property in meeting all requirements of the client for pleasure both in and out of doors.

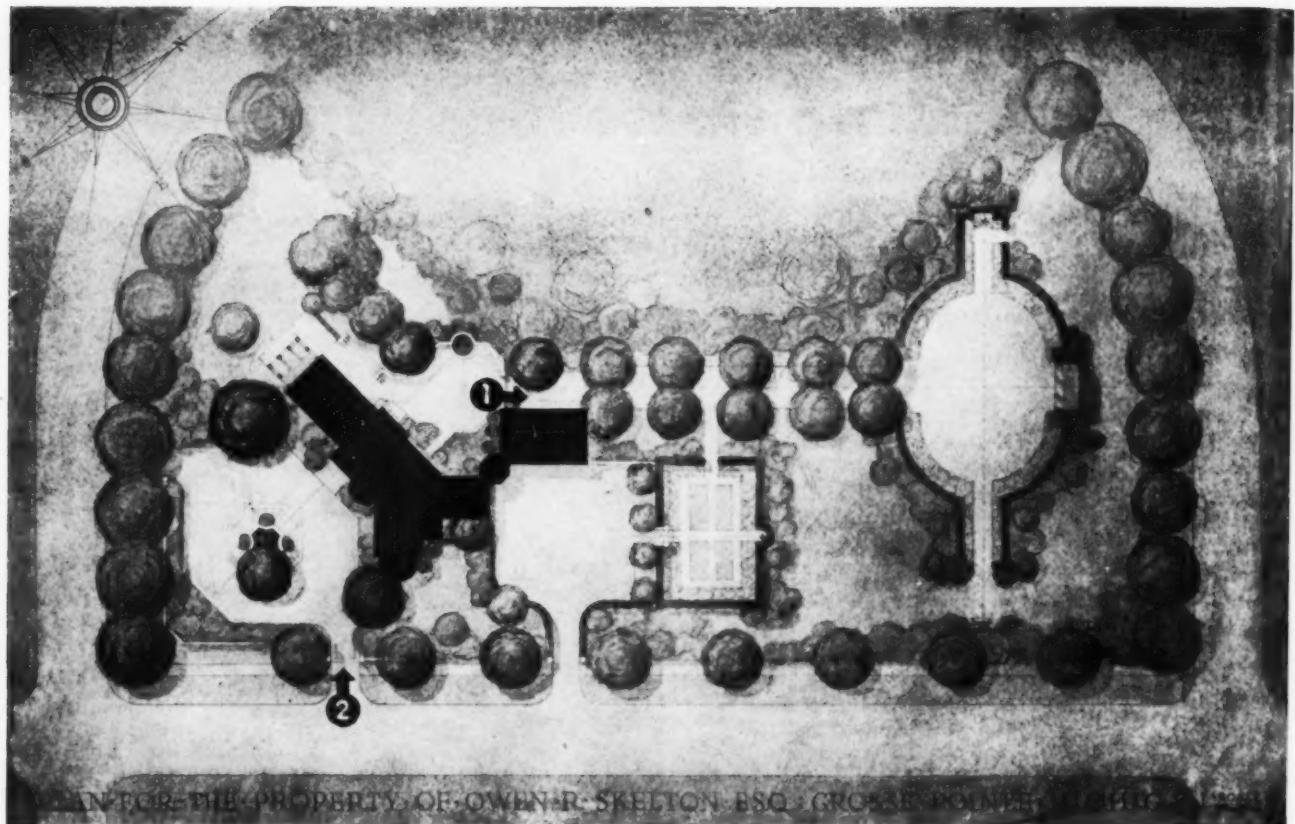
For the study of location and orientation the house is pictured as a block and the floors of the house as planes within it.

The land upon which the house is to be located is seldom level, and it is now we must consider topography,

the undulations of the earth's surface. A trained eye sees these undulations as contours, forming imaginary horizontal planes at various vertical intervals. These contours plotted on the plan constitute the topographical survey, which, with the additional location of trees and other surface features at a reduced scale, makes possible study of the entire property simultaneously.

In locating the house, orientation should take full advantage of sunlight and breezes together with interesting topography. Since the sun's position throughout the year is a known factor in any locality, careful planning will afford a maximum of sunlight. Bedrooms, breakfast room, and porch ought to have first consideration. Dining room and living room should have their share, too.

Breezes may vary, though in each locality there is a fairly definite direction from which they may be expected during the summer months when they are most needed and welcome; they are usually from the southwest to south-southeast.



A PLAN of a relatively small place in which the design achieves the maximum in related use and pleasure within a planting composition giving seclusion and pictorial interest, the backbone of which is the elm allée making a long view possible. (The numerals on the plan above indicate the position from which the photographs were taken.)

Topography, trees, and views add their influence in the choice of a location. It is at this point that the landscape architect's mental painting contributes most to achieving a complete setting for house and grounds which will insure the maximum in human use and pleasure.

It is evident now that we have, in a fairly definite way, oriented the house so that the living portion faces the south, varying to the east or west of south because of certain other considerations, dictated by topography, interesting views, or the existence of large trees. This orientation places the entrance to the north, the kitchen and other utilities usually to the northwest, leaving the eastern portion of the house as part of the living side to take advantage of the morn-



Photos by Gottscho

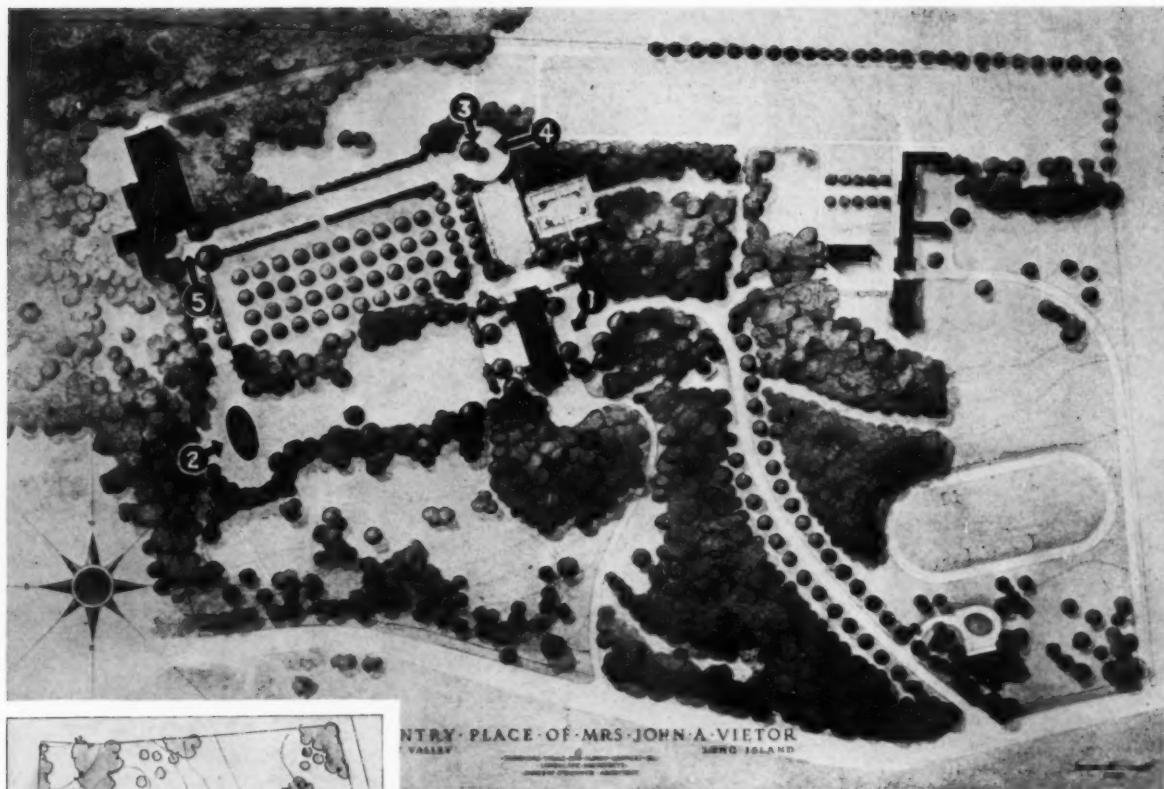
ing sunlight from that direction.

The house is now ready for placement on the site; with the roofed area for living defined, it must now be definitely placed as part of and related to the property as a whole. The first consideration is easy access to and from the house; views from within the house are next in importance; then, treatment of the area immediately adjacent to the house, sufficiently open to allow for light and

air, and yet sufficiently shaded by trees to insure comfort in the open. For the south or living side of the house this area may readily take the form of a terrace as an intermediate living room to the landscape beyond, a first contact or platform from which views, gardens or walks radiate. Success in the planning of this area will depend in large measure on adequate scale in area, form and placement of trees for shade, and framing of views

either from or to the house. Structural elements such as walks, balustrades, and steps, must also be in scale and in sympathy with the house architecture.

The approach side or main entrance has its specific requirements: ease of grade, ample "turn-around", and parking facilities are of prime importance; proper grading and drainage are not to be neglected. Service, too, makes its demands for proper



TOPOGRAPHY as shown here is the basis for judging the use of the land in the general plan. Note the recognition and the preservation of existing tree masses in the design and the accompanying photographs. Location of driveway approach was also determined by adaptability of the ground.

1

approach and ample area for deliveries.

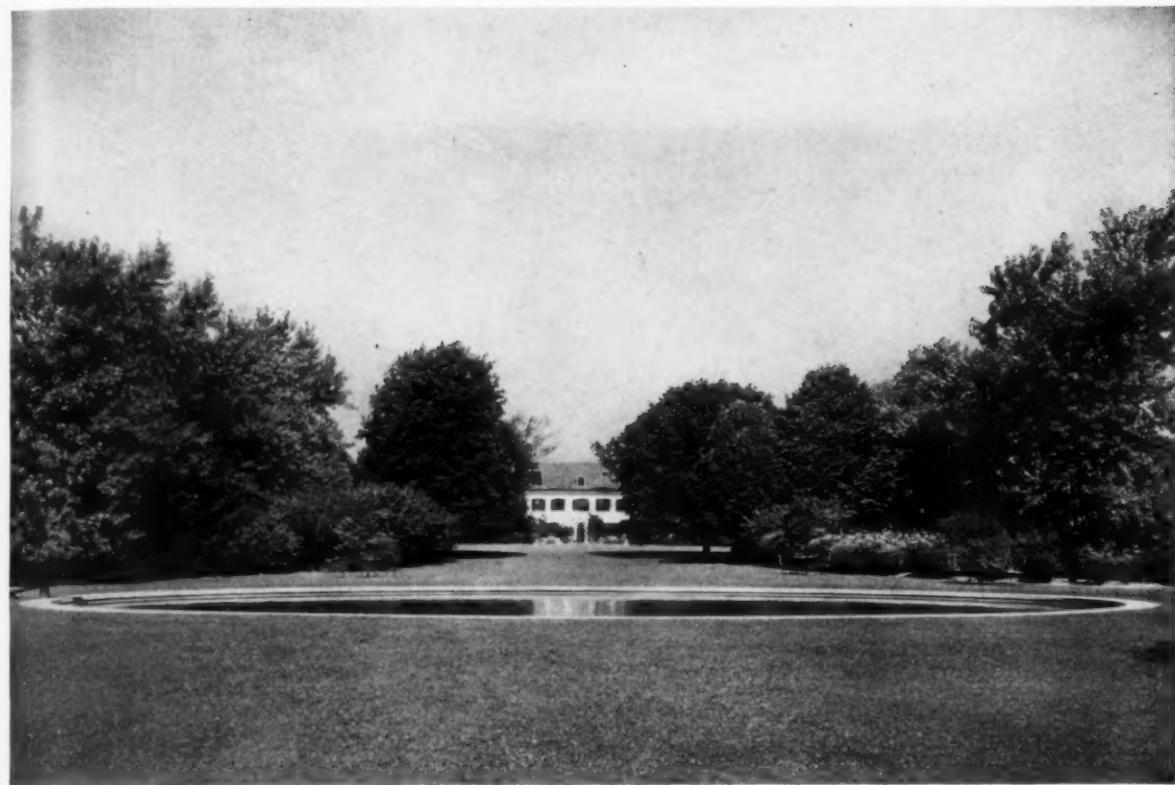
With full appreciation of all requirements and benefits that our immediate problem demands and that the land affords, we have now located our house, planned the approach to it from the highway, treated the immediate setting of the house, and

recognized its relation to the property as a whole.

Gardens now take their place—some formal, others informal, some designed by fancy, others by dictation of existing natural conditions. Play areas, tennis courts, swimming pools, and the like fit into the picture



BUILDING
TYPES



2

Photos by Gottscho

to perfect the play and recreational phases of country living. For the horsemen there must be stables and barns, located aside the prevailing breezes. Open areas for pasture, and growing of fodder must be considered in this connection.

The motor car must have proper housing; hence the garage for two to five cars becomes a fair-sized block in space. It must be located to afford ready and easy approach to and from the house, with an ample area or court for parking, yet not so close to the house that noise will disturb.

I have now pretty well outlined the fundamentals that a designer must recognize in his study and approach to the preparation of a general plan for the development of a property for private use. Be the property large or small, the basic considerations are the same; only in scale or magnitude do they differ.

A word as to planning: I consider the preservation and use of existing planting in the general composition as of prime importance; then, the addition and location of major trees adjacent to the house; and finally a careful study of all planting arrangements with full recognition of the forms and colors suitable to the land in question as well as to their purpose of giving comfort and pleasure.

THE LARGE POOL (above) here serves a dual purpose: for swimming, and as a mirror of reflection. **THE SMALLER POOL** (below) adds animation as a central point in the composition on axis with the living porch of the house. The residence shown on these pages and the indoor tennis house shown on the following page were designed by James O'Connor. (The numerals on the general plan on the opposite page indicate the position from which the photographs were taken.)



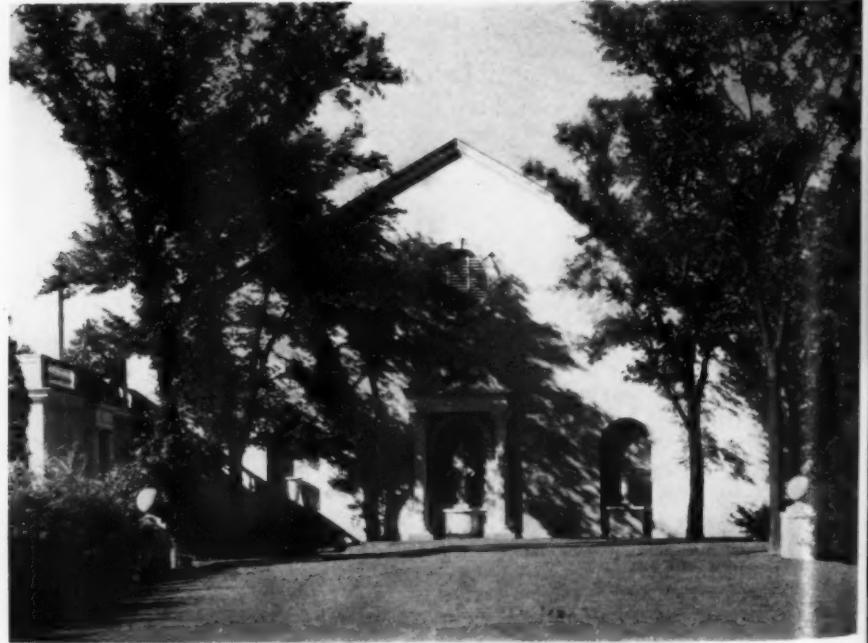
3



4

Photos by Gotscho

5



CONTINUITY OF INTEREST and direction by the use of a water feature is here further emphasized as related to the cedar allee (above) leading to the indoor tennis house (right). The use of trees and shrubs in pleasing composition controls the views and gives scale.